APPENDIX J PHASE 1A ARCHAEOLOGICAL RECONNAISSANCE SURVEY

REPORT

PHASE IA ARCHAEOLOGICAL RECONNAISSANCE SURVEY RENTSCHLER FIELD PROJECT/COMPILATION PLAN EAST HARTFORD, CONNECTICUT

Prepared for Baystate Environmental Consultants, Inc.

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MANAGEMENT SUMMARY

AHS, Inc. recently completed a Phase Ia archaeological survey of the proposed 650-acre Rentschler Field development project in East Hartford, Connecticut. The project includes approximately 618 acres of United Technologies Corporation (UTC) property between Silver Lane, Main Street and Brewer Street in East Hartford, Connecticut. The 618-acre core development area is focused on the old Rentschler Field airfield in the center of the UTC property and the wooded area that forms the eastern third of UTC land. Outside of the core development area, approximately 32 acres of transportation improvements are planned, including the widening of Silver Lane and a new flyover intersection with I-84, as well as changes to intersections at Brewer and Main Streets and Willow and Main Streets, a new frontage road to link High and Main Streets, and possible ramp changes along Routes 2 and I-84.

The goal of the Phase Ia survey was to make an informed assessment of the project area's potential for containing significant buried prehistoric and historic period archaeological remains, and above-ground historic properties. The survey included background research in historical records, environmental sources, and the state's site files; walkover inspections of the open, wooded and roadside portions of the project area; and a soil probe survey of the open area (i.e., the former airfield). The survey indicates that approximately 160 acres of the proposed core development area are sensitive for the presence of prehistoric and historic-period archaeological resources. Approximately 93 of the sensitive acres fall within the relatively open land comprising the former airfield, where the soil probe survey identified intact moderately well-drained to well-drained soils. The remaining 67 acres are concentrated in the wooded area east of the airfield. In addition, there are smaller archaeologically sensitive areas outside of the core development area, primarily along Silver Lane. AHS recommends that the sensitive areas be subjected to Phase Ib archaeological survey before any construction activity is initiated.

In addition to the archaeological sensitivity assessment, this report also presents the results of an examination of the historical and architectural resources that could be affected. The proposed undertaking has the potential to affect a number of standing historic resources on Main Street and Silver Lane, depending upon the final design of intersection improvements, road widening, and new transportation-related construction. These include the Hockanum Cemetery, Fire House No. 5, and several houses from the 18th, 19th, and early 20th centuries. These resources all have local historical and/or architectural significance and it is recommended that they be considered eligible for listing on the State and National Registers of Historic Places.

I. INTRODUCTION AND SCOPE OF WORK

Archaeological and Historical Services, Inc. (AHS), under contract to Baystate Environmental Consultants, Inc. (BEC), recently completed a Phase Ia Archaeological Reconnaissance Survey of a proposed development on 618 acres of land owned by United Technologies Corporation (UTC) on Silver Lane in East Hartford, Connecticut, and 32 acres of transportation improvements outside of the core UTC development area (Figures 1 and 2). The project is known as the Rentschler Field Project/Compilation Plan, and is to include retail stores, a magnet school, and a ring road within a core development area, plus a new interchange connection to I-84, the widening of Silver Lane, changes to the intersections of Brewer and Main Streets and Willow and Main Streets, a new frontage road to link High and Main Streets, possible ramp changes along Route 2 and I-84, and other spot improvements on local roads around the core development area. Because the project is receiving state assistance, it must comply with the Connecticut Environmental Protection Act (CEPA), one component of which requires an assessment of the potential of a project for affecting significant archaeological (subsurface) and historic (aboveground) resources.

A standard Phase Ia Reconnaissance Survey, also known as an archaeological assessment survey, was conducted by AHS in September 2005 for inclusion in the Environmental Impact Evaluation (EIE) prepared as part of the CEPA process. Performed in accordance with the State Historic Preservation Office's (SHPO) Environmental Review Primer for Connecticut's Archaeological Resources (hereafter Primer), the assessment survey included background research in historical documents, environmental publications, maps, cultural resource management reports, and the SHPO's file of reported archaeological sites. Also included in the survey was a walkover inspection of the project area and the placement of a small number (37) of soil probes to assess the integrity (i.e., degree of intactness) of the soils and the potential for undisturbed subsurface archaeological remains (Figure 3). The Phase Ia survey, as reported in the EIE (DECD 2006), determined that approximately 285 acres of the 618-acre core development area (i.e., exclusive of peripheral transportation improvements) appeared to have moderate to high potential for containing significant archaeological resources (Figure 4). An additional 1600 linear meters of transportationrelated improvement areas were estimated to be archaeologically sensitive. The sensitivity estimates were based on *Primer* criteria; i.e., the sensitive areas are relatively level and well drained, did not appear to be disturbed, and are in areas of known prehistoric and early historic occupation.

In the normal archaeological survey sequence, as outlined in the *Primer*, the Phase Ia survey would be followed by a Phase Ib survey, which must include subsurface testing at no greater than 15-meter intervals in all areas of moderate to high archaeological sensitivity as determined by Phase Ia survey. At 15-meter intervals, testing the 285-acre sensitive area identified in the Phase Ia survey would require 5130 test pits (18 pits/acre) with an additional 10% (500 pits) for "array testing" around significant artifact-bearing test pits, which is in keeping with *Primer* guidelines (an array is a cluster of four test pits in each of the cardinal directions two meters from the artifact-bearing test unit). In the 1600 linear meters of sensitive area, 15-meter-interval testing would require 108 test pits. The cumulative total of Phase Ib test pits would be 5738, assuming that the Phase Ia estimate of archaeological sensitivity is correct. Testing at this intensity would be extremely expensive.

Systematic subsurface testing in a Phase Ib survey is necessary because the goal of this survey is to locate <u>all</u> archaeological resources within the project impact areas. Mitigation or avoidance of impacts to significant archaeological resources cannot be achieved until the resources

are physically located. However, the limited soil cores AHS placed during the EIE Phase Ia survey indicated that the project area is characterized in some portions by pockets of intact soil within disturbed areas (Figure 4). The Phase Ia evaluation of sensitive areas was therefore relatively general, thus it was possible that more land area was disturbed and could be eliminated from Phase Ib subsurface testing, reducing the Phase Ib effort considerably. AHS therefore proposed to refine the Phase Ia EIE sensitivity evaluation by placing one-inch-diameter soil probes at 60-meter intervals (300 probes) in the nonwooded core development area. The soil probe results would allow for further reduction of archaeologically sensitive areas so that the Phase Ib effort could be more focused and less expensive. AHS also proposed that the wooded areas be more intensively walked over and inspected to refine the assessment of sensitivity in these areas.

The intensified Phase Ia investigations were undertaken by AHS between November 2005 and January 2006, by which time the core development area had been subdivided into parcels (Figures 5 and 6). The State of Connecticut requested that AHS prioritize the intensified archaeological investigations to focus first on the 32.5-acre former ING parcel (Development Areas A1 and A2), followed by the 62-acre Cabela's parcel (Development Area C1) (Figure 5). Summary reports of the intensified Phase Ia investigations at the former ING parcel and Cabela's parcel were submitted in December 2005 and January 2006, respectively, then revised in January (Harper 2006a and 2006b). The 9.7-acre magnet school area (Development Area H2) was third in priority, followed by the approximately 15,000-foot-long and 150-foot-wide ring road construction associated with the core development area (totaling approximately 44 acres based on BEC mapping) (Figure 5). Intensified soil survey of the remaining 160 acres of the runway area and an intensified walkover of the non-runway portions of the development area and peripheral proposed spot road improvement locations were to be done after investigations of the four priority areas were completed. However, because the investigations were undertaken in the winter, some alteration of the schedule regarding the magnet school and new ring road areas was necessary. The soil probes could not be placed under certain deep-freeze conditions, and walkover inspection of the wooded areas could not be done in snow-covered conditions. AHS therefore attempted to complete as many soil probes as possible, all in open areas, before freeze-out. Walkover inspection of the wooded areas, which include the magnet school area, was conducted only when there was no snow cover. Inclement winter weather slowed the intensified assessment somewhat.

Background historical document research and visual inspection identified 15 resources in or near the project area that meet the criteria for the State and National Registers of Historic Places (Figure 6). As reported in the EIE, these include a cemetery, the Pratt and Whitney plant, a school, a firehouse, a bottling plant, and ten houses. It is believed that the area inspected, which included both sides of Silver Lane, Main Street from Brewer Street to Silver Lane, and the north side of Brewer Street, covers all anticipated areas of associated transportation improvements. If the further design of the transportation improvements places them outside the area that was visually inspected, additional historic resources may be affected.

This report presents the results of the original Phase Ia survey, reported previously only in the EIE, and the expanded Phase Ia survey, partially reported earlier in two separate end-of-fieldwork summaries for the former ING parcel/Development Areas A1 and A2 (Harper 2006a) and the Cabela's parcel/Development Area C1 (Harper 2006b). This report describes the methodology, results and conclusions of the original and expanded Phase Ia investigations, and presents recommendations regarding identified archaeologically sensitive areas and properties of historic significance such as cemeteries, houses and buildings. All of the Phase Ia work was performed in

accordance with the Primer.

Daniel Forrest served as Senior Project Archaeologist and Field Supervisor, and designed and conducted the soil probe investigation and analysis. Brian Jones conducted soil probe investigation and analysis, and performed the Native American background research. Lisa Centola, Eric Pomo, Daniel Forrest and James Poetzinger helped conduct the soil probe investigation; Daniel Forrest, Brian Jones, and James Poetzinger also conducted the walkover survey. Bruce Clouette conducted historical background research and evaluated the historical significance of above-ground properties. Mary Harper was the Project Manager.

II. PROJECT DESCRIPTION

A. Development Area

The core of the proposed Rentschler Field Development Project encompasses approximately 618 acres of land owned by United Technologies Corporation (UTC) in East Hartford, Connecticut (Figure 5). The project area is bounded by Silver Lane to the north, the Pratt and Whitney factory to the west, and Brewer Street to the south. Fifteen proposed Development Areas, comprising a total of ca. 500 acres, have been designated within the project area (Figure 5). The development is also planned to include the construction of a large ring road and ancillary surface roads totaling about 44 acres (approximately 15,000 feet long and 150 feet wide based on BEC maps) to provide access and utility services to the development areas. About sixty-six acres within the core project area are wetlands undesignated lots (Figure 5).

In addition to the core development area, approximately 32 acres of changes to surrounding existing roads are also proposed, including the widening of Silver Lane to accommodate new traffic lanes in the vicinity of the existing Airport Road intersection, linking Roberts Street/I-84 to the proposed development with a new flyover interchange; the creation of a new frontage road to link High and Main Streets, and possible ramp changes along Route 2 and I-84, plus improvements to existing road intersections at Willow Street and Main Street and Brewer Street and Main Street (Figure 2).

B. Existing Conditions

The project area can be divided into four general subareas: 1) open land within the UTC bounds, 2) northwestern development parcels within the UTC property, 3) wooded land on UTC property, and 4) road improvement areas outside of the core development area. The first subarea is the former Rentschler airfield, which occupies approximately 300 acres of mostly open land in the center of the project area (Figures 2 and 5). This area is crosscut by three paved runways, the southwest-to-northeast-oriented Runway 4/22 to the west, the north-south-oriented Runway 18/36 to the east, and the northeast-to-southwest-oriented Runway 13/31 to the south. Runways 4/22 and 18/36 are 150 feet wide and are both truncated by the Rentschler Stadium development along the northern project area boundary. Runway 13/31 is 80 feet wide and has been truncated by the Pratt and Whitney facilities to the west of the airfield. These three runways, together with a smaller east-west-running taxiway, comprise approximately 50 acres of pavement within the former airfield. In addition to the runway surfaces, a small one-lane paved road runs around the airfield periphery and links the former airfield with former Pratt and Whitney facilities to the east on the airfield.

There are only two standing structures within the airfield. The larger of the two is a ca. 1960 steel and glass air control tower located at the south end of the former airfield in Development Area A3. The second structure is a small brick pump station measuring 10 feet by 12 feet located approximately 350 feet north of a small pond created by damming of Pewterpot Brook in Development Area A1.

Subarea 1 encompasses Development Areas A1, A2, A3, B, C1, C2, D, E and F, and is comprised mostly of former airfields (Figures 1 and 5). Vegetation within the former airfield is a mosaic of grasses and other herbaceous species interspersed with a variable cover of woody scrub growth (Photograph 1). The scrub cover ranges in height from four feet to 15 feet and from widely scattered shrubs to fairly dense stands, with the latter concentrated in the southern and eastern portions of the former airfield. Vegetative cover is continuous outside of paved areas and no

extensive patches of bare soils were observed within the airfield. The topography is essentially flat, not unexpected for a former airfield. The surface elevation varies from a high of approximately 52 feet at the northern boundary to a low of 38 feet at the southwestern corner. Excluding the drainage ditches which border the eastern and northern edges of the former airfield and Pewterpot Brook, which currently flows near the southern edge, there are very few abrupt changes in the land surface. Exceptions are the linear spoils from the excavation of the ditches just beyond the eastern edge of the airfield and the more gradual rise created by the spoils from the creation of the pond along Pewterpot Brook to the south (Figure 1). The presence of an underground stormwater drainage system is indicated by catch basins arranged along the edges of the runways. Two catch basins were also observed in the large triangular area bounded by all three runways (Development Areas C1 and C2), suggesting that the drainage system extends beyond the immediate perimeter of the runways themselves.

Northwest of Subarea 1, Subarea 2 encompasses approximately 59 acres of flat, heavily developed land surface, comprised of Development Areas J, ADA, and a nondesignated northern development parcel that encompasses the proposed East Hartford Boulevard North access road area (Figures 1, 2, and 5). Despite intensive development in this subarea, portions of Development Areas J and the nondesignated northern parcel may contain relatively undisturbed soils.

Located east of the former airfield, the wooded portion of the project area is the third subarea. This area includes development areas I, G, H1, H2, ND lot, and the eastern margins of C2, comprising approximately 225 acres (Figure 5). Undergrowth within the wooded sections is relatively sparse, suggesting the area has not been clear-cut or extensively modified in the recent past. The network of open drainage ditches is denser in this area, particularly in the vicinity of the former Pratt and Whitney facilities. This area is crosscut by numerous small paved roads linked to former parking lots and 20th-century building foundations and concrete building pads. Chain link fences surround several of these lots. Further east, the developed land gives way to a mature secondary forest. As with the former airfield, this area is quite flat, although there is significantly more small-scale topographic variation, with shallow depressions and small swales present throughout. Because the wooded portion of the project area shares the same geological history and context as the open former airfield area to the west, conditions in this subarea likely mirror the conditions within the airfield prior to large-scale grading and drainage manipulation. The surface hydrology of the property is at least partially controlled by the drainage ditches, yet heavy rains during the two weeks prior to the Phase Ia walkover survey caused ponding of many low-lying areas. The influence of the level terrain on the drainage patterns is quite pronounced, as areas just one foot lower in elevation than the surrounding landscape were completely submerged during the walkover survey. Despite these conditions, the existing vegetation suggests any ponding is a shortterm phenomenon. Tree species throughout the wooded are typical for mesic woodlands in the region, including red and sugar maple, shagbark hickory, and white ash, with several stands of white pine and scattered oak trees. Although the overall composition of the forest canopy reflects moist conditions, many of these species will not tolerate extended periods of submergence, indicating the ponding is a transitory effect of unusually heavy precipitation. Another contributing factor for the ponding observed within portions of the project area is the stormwater drainage system for abutting property owners.

The fourth subarea is comprised of the transportation improvement areas outside of the core development area within UTC bounds. The transportation improvements have not been designed yet, but their areas are generally known (Figure 2). In addition to a new highway flyover

interchange connecting to I-84, Silver Lane will be widened and numerous smaller roads surrounding the development area will undergo spot improvements. Such improvements include new frontage roads, changes to intersections of Willow and Main Streets, Brewer and Main Streets, and probable ramp changes to I-84 and Route 2, which together comprise approximately 32 acres.

Although the roads and areas surrounding the UTC property are densely developed, primarily with residential neighborhoods, there are extant historic-period standing structures and resources (Figure 6). Silver Lane is an early road, and not only contains historic structures and cemeteries, but may contain historic-period archaeological sites as well. Of particular concern are archaeological remains associated with extensive 1780 and 1781 French army encampments in the project area vicinity (Figures 7 and 8). In addition to colonial Euro-American archaeological sites, there may be remains of Podunk Indian villages and camps documented as being in the core project area and its vicinity (Figures 20 and 22).

III. METHODS

AHS's methods followed the standards set forth for Phase Ia Archaeological Reconnaissance surveys or assessment surveys. The methods describe below apply to the initial Phase Ia survey and the follow-up intensified assessment survey. As defined in the SHPO's *Primer*, which sets forth the standards for archaeological survey in the state, the goal of a Phase Ia survey, also known as an assessment survey, is to determine the potential for a project area to contain significant cultural resources. Cultural resources include buried archaeological sites from the prehistoric (i.e., pre-European settlement) and historic periods, and above-ground historical resources such as buildings, engineering features, and certain landscapes.

A. Background Research

Numerous sources were consulted during the background research, including local histories and historical maps, cultural resource management reports, aerial photographs, geological and ecological data layers included in the Connecticut Department of Environmental Protection Geographic Information Systems data package, and the SHPO's archaeological site files. All of the information was compiled to help identify the possible locations of prehistoric and historic archaeological sites, to identify the types of possible prehistoric and historic archaeological remains, to determine soil integrity relative to archaeological potential, and to understand past land use to facilitate assessment of archaeological potential.

In order to construct a historic context for the project area and surrounding streets, the project historian consulted a series of maps that depict the area in varying degrees of detail. Silver Lane just west of the project area is shown on an encampment map prepared by the engineers of the French Army in 1781 (Rice and Brown 1972) (Figures 7 and 8). The earliest general maps (Blodget 1792, Warren and Gillet 1813) (Figures 9 and 10) show only public buildings and industrial uses such as sawmills. In the later years of the 19th century, the area is shown in greater detail, with maps by Woodford (1855), Baker & Tilden (1869), and Hyde (1884) (Figures 11-13) depicting the location of individual houses and giving the names of property owners. For the 20th century, a series of insurance maps prepared by the Sanborn Map and Publishing Company, covering the years 1903 through 1968, provides much building information (Figure 14). The project historian also consulted previous inventories of the area, including two architectural and historical surveys (Connecticut Historical Commission 1980, 1984), as well as specialized surveys on burying grounds (Slater 1996) and industrial buildings (Roth 1981). Much information was gleaned from a general history of East Hartford (Paquette 1976) and from Pratt & Whitney Aircraft's corporate history (1950).

B. Initial Phase Ia Walkover and Soil Probe Survey

Walkover visual inspection of the entire project area was conducted to help identify areas of relative archaeological sensitivity. In this task, AHS looked for visible cultural remains suggestive of archaeological sites, such as foundation ruins, which may have associated belowground components. These areas, assuming they have not been disturbed, are considered to have relatively high archaeological potential. Areas of certain environmental characteristics, such as undisturbed well-drained, relatively level locations in proximity to water sources or wetlands, have moderate to high potential for prehistoric sites. Wetlands, areas of slope in excess of 15%, extremely stony soils, and excessively disturbed areas have low potential. Historic-period structures and engineering features were also identified in the walkover.

In addition to the walkover survey, AHS conducted limited soil condition sampling through the use of a small hand-powered soil probe. The results of this survey indicated that areas of intact or largely intact soils are preserved within the open fields surrounding the runways and within the wooded areas as well.

C. Intensified Walkover Survey of Wooded Areas and Roadside Areas Outside of the Core Development Area

The wooded development areas to the east of the former airfield and the proposed core development road network were inspected during the archaeological investigation in order to help refine the archaeological sensitivity assessment. The wooded area includes development parcel H2, the proposed location of the magnet school. Existing ground conditions and disturbed areas were noted. Areas of known hazardous waste contamination were excluded from this investigation. Aerial photographs were used to help record information about areas of significant ground disturbance or other conditions reducing the potential of an area to contain significant archaeological resources. No soil probes were placed in these areas, because land modification is obvious compared to the open former airfield. Commonly encountered small-scale phenomena that directly affect the archaeological sensitivity of the project area, such as ephemeral ponding or small ground disturbance less than 500 ft² in area, were not mapped in detail as this would be impractical. Instead, the percentage of landscape characterized by these conditions within easily defined areas (blocks) were estimated during the walkover survey. These blocks were typically bounded by either fences, roads, property lines, or drainage ditches. The archaeologically sensitive acreage was then estimated based on the area of these blocks and the "write-off" percentages. The northwestern development parcels (Subarea 2) and areas of spot transportation improvements (Subarea 4) were also carefully inspected and areas of archaeological sensitivity noted.

Also in this phase, the project area and the surrounding streets were visually inspected by the project historian in order to prepare a list of above-ground resources that might be eligible for listing on the National Register of Historic Places. The historian made notes on the buildings and took photographs. Some of the buildings that appeared to be eligible had been identified by previous inventories, but others, such as the 1942 Coca-Cola bottling Plant at 451 Main Street, were not. The in-the-field survey of standing historic resources was performed in accordance with the standard architectural and historical survey methodology recommended by the SHPO.

D. Intensified Soil Probes at the Former Airfield

Before fieldwork on the soil probe phase of the investigation was undertaken, AHS created a 60-meter sampling grid in its Geographic Information System (GIS). The grid was extended over the entire former airfield with its origin (N0E0) located in the southwest corner of the project area. The grid was then rotated so that its north-south axis was parallel to Runway 18/36 (an azimuth of 349.65° relative to the Connecticut State Grid) and shifted so that an existing survey monument coincided with one of the grid points; the survey monument is a boundary marker at the southwest corner of the Rentschler Stadium property (CT State Grid NAD 83 coordinates: E1035475.2756 N836776.4286). The AHS grid point for this monument is N1380E1140. AHS grid coordinates for a second survey monument were calculated within our GIS to allow the sampling grid to be tied to the Connecticut State Grid, but unfortunately the second monument was apparently removed or covered during construction of the stadium parking lots. As an alternative, AHS calculated state grid and sampling grid coordinates for a prominent landmark shown on georeferenced aerial

photographs of the project area and a CAD base map of the project area, both provided by BEC. This landmark is the intersection of painted centerlines for Runway 22 and an east-west running taxiway. Using the survey monument and the runway control point, AHS used a Total Station to mark each 60-meter grid point in the field with four-foot wooden survey stakes. The AHS grid coordinates for each point were clearly marked on each stake.

One-inch-diameter soil probes were placed within 50 centimeters of each marked point. The soil probes are simple stainless steel hollow-tube samplers. The bottom 30-centimeter-long portion of the probe is open on one side to allow for detailed examination of the recovered sediments. Each probe was accomplished in three 30-centimeter "pushes" so that the entire soil profile could be observed to a maximum depth of 90 centimeters below the existing grade. The probes were driven by hand unless stiff sediments were encountered, in which case a small hammer was used to advance the probe. Obstructed probes were terminated immediately and no attempts were made to push past or through the obstacle in order to avoid any potential damage to buried utilities within the sampled area. Where necessary, additional soil probes were placed at closer intervals to more clearly define the boundaries between archaeologically sensitive areas and non-sensitive areas. These probes were located by pacing straight lines between survey stakes, or by pacing parallel to grid lines with the use of a compass when no clear sightlines between stakes were available. AHS grid coordinates were recorded for each of these probes. No survey markers were placed for the supplementary probes. No samples were collected during soil probe investigations and the small amount of sediment and soil removed for each probe (approximately 0.35 liter) was left at the surface when the probe was completed.

The soil profile of each probe was recorded on field forms, with notes on the color, texture, and composition of all encountered sediments, as well as the depth below surface of all soil interfaces or transitions (see probe profiles in Appendix III). If the water table was encountered, the depth below surface was recorded when the profile was drawn. Once completed, all the soil probe records were coded within our GIS to one of six possible classes: 1) intact, 2) buried profile with intact solum, 3) buried profile with intact subsoil, 4) buried wetland soils, 5) fill/disturbed, or 6) obstructed. These were defined as follows. Intact profiles were those in which the observed soils were consistent with an unaltered plowed field. The profiles were characterized by a homogenous plowzone directly overlying well-drained to moderately well-drained B-horizon soils overlying Chorizon sediments. Buried profiles with intact solum were identical to Intact profiles with the exception of a variable thickness of fill at the surface. Buried profiles with intact subsoil retained intact B-horizon soils beneath fill or disturbed soils. Buried wetland soils were characterized by variable fill deposits overlying either gleyed soils (grey soil horizons resulting from waterlogging and lack of oxygen) or, more rarely, organic mucks. (It is important to note that the term "wetland soil" as used in this investigation is not necessarily consistent with Connecticut State wetland soil classifications and should not be confused with such. Rather, this classification was designed to identify areas that would have been too wet to have been settled by Native American or early Euro-American populations living in the region.) Fill/disturbed profiles lacked any intact remnants of Aor B-horizon soils. In some cases, fill deposits were found to be directly overlying intact C-horizon sediments, which generally do not retain any archaeological sensitivity. Obstructed cores were recorded any time the probed was impeded by a hard object. The depth of the obstruction was recorded, as well as the characteristics of the fill deposits overlying the obstruction. Unlike the vast majority of the Connecticut landscape, the former airfield does not contain any significant gravel deposits or fieldstone. For this reason, all obstructed probes were assumed to have encountered recently buried man-made features rather than naturally occurring rock.

Once all of the data for the soil probes had been coded, archaeologically sensitive areas were defined by the location of probes with Intact, Buried profile with intact solum, or Buried profile with intact subsoil results.

IV. RESULTS: BACKGROUND RESEARCH

A. Geological Context

The project area overlays red-brown Portland Arkose of the Newark Terrane at a depth of ca. 250 feet. Bedrock is extraordinarily deep here because the project area lies near the middle of the Hartford Mesozoic Basin. Very thick deposits of laminated silts associated with Glacial Lake Hitchcock overlay the bedrock. These were laid down during the period of the glacial lake, between ca. 15,000 and 12,500 years ago. When Glacial Lake Hitchcock drained, the channel of the Connecticut River shifted repeatedly across the former lake bed, washing away much of the fine clay and silt sediments and left behind the reworked fine to medium sands which now cover the project area. These sandy sediments extend approximately 20 feet below the existing surface of Rentschler Field. Just east of the project area a remnant of thin till protrudes through what are otherwise remnant glacial Lake Hitchcock lake bottom silt deposits near the surface. This indicates that the depth of the terrace sediments thins to the east. About a half mile east of the project bounds (along Forbes Street), the lake bottom silts give way to a series of sandy deltaic deposits, marking the various stable margins of the ancient lake level. About a quarter mile north of the project bounds, the terrace sediments give way to post-glacial silty alluvial deposits associated with the Hockanum River floodplain. To the west, these merge with the alluvial deposits of the Connecticut River. The geological context of the Rentschler Field project area is significant for several reasons. The terrace sands covering the project area form exceptionally flat terrain; however, unlike the alluvial lands bordering the nearby Connecticut and Hockanum Rivers, the winnowed deposits covering the terrace tend to be better drained and potentially more attractive to prehistoric Native Americans looking to establish seasonal or long-term habitations. This potential advantage is underscored by both historic records of Native American settlements in the area surrounding and within the project area (see below) and by recent research that suggests prehistoric sites were preferentially located on this surface throughout Glastonbury, East Hartford and South Windsor (Jones 2005, OSA Site Files).

B. Ecological Context

Information on landscape conditions prior to the settlement by Europeans is an essential part of understanding early human occupations and planning archaeological research. The present environment of the project area has been shaped by geologic events largely associated with the last glaciation, Connecticut's humid mid-latitude climate, and the action of plant, animal and human biological communities. Even in a small state such as Connecticut, significant variations in topography, climate, and geology on the local level are expressed in many subtle and not-so-subtle ways. Variations in habitat can yield complex and dynamic mosaics of distinctive plant and animal communities. Humans, like most species, are sensitive to these variations and can be generally expected to settle in areas providing reliable and predictable resources. While climate change over the course of the last 11,000 years that humans have occupied the region has repeatedly transformed the environment in the Northeast, many basic characteristics of the landscape itself have remained relatively stable. Local geology and topography present important controls on the development and potential reorganization of habitats, and thus provide archaeologists with one means of identifying enduring features of the landscape around which people in the past would have organized themselves.

The effects of human activity, particularly in the past three centuries, have strongly modified the physical aspects of the original landscape. The modern successional forests of southern New

England are largely an artifact of extensive 19th-century land clearing and ongoing small-scale logging and bear little resemblance to the woodlands present before the arrival of European settlers. It is, however, a mistake to imagine the first Europeans encountered a pristine natural landscape when they arrived in New England. The Native inhabitants of the region played a significant role in shaping the pre-Contact landscape, including the variety and distribution of game and plant species (e.g., Day 1953, Denevan 1992, Jones and Forrest 2003). The controlled use of fire, selective plant and animal harvesting, vegetation clearing and other disturbances to the environment resulted in a largely anthropogenic landscape well before the arrival of Europeans. Nevertheless, the landscape and environment prior to the arrival of Euro-American settlers were major factors influencing when and where Native American as well as Euro-American activities took place.

In the analysis of a project area's ecological context, archaeologists draw upon a wide range of sources. One important concept linking the data used in the analysis is that of the "ecoregion." An ecoregion is characterized by a distinctive climate and landscape as expressed by local vegetation and the presence or absence of particular indicator species (Dowhan and Craig 1976: 27). Ecoregions thus represent a natural division of land, climate and biota helpful in the organization of geographical and ecological space. As such, they help to better define the environment in which the region's human population had to meet its economic needs.

By Dowhan and Craig's definition (1976: 39-41), the Rentschler Field project area lies within the North-Central Lowlands Ecoregion. This is a broad, interior lowland lying between about 25 and 50 miles from the coast. It is characterized by extensive floodplains and riverine lowlands. interspersed with prominent north-trending ridge systems (Dowhan and Craig 1976: 32). Elevations lie between sea level and 950 feet, but generally fall between 50 and 250 feet above sea level. Mean annual temperature is 50 degrees Fahrenheit, making it one of the warmer regions in the state, with an average of 180 frost-free days. Average winter temperatures are below freezing (28 degrees Fahrenheit). Average annual precipitation is 43 inches. Well-drained locations support a hardwood mix dominated by oaks, hickories, white pine and hemlock, with black birch, red cedar and white ash in lesser numbers. Chestnut was common until disease severely reduced the trees' abundance in the 1920s. Floodplains are dominated by fast-growing species such as cottonwood and form ideal habitat for sometimes dense stands of catbriers, poison ivy, honeysuckle and bittersweet. Significant biologic habitats include traprock ridges (west of the river), black spruce bogs, sand plains, grasslands and floodplain forests and their associated backwater swamps, all of which occur within about two miles of the project area. The project itself is dominated by the open former airstrip of Rentschler Field, bordered by regrowth forests on its eastern margin and the heavily industrialized UTC plant to the west.

Prehistorically, alewife, salmon, eel, sea lamprey, sturgeon, and shad would have been available in the nearby Connecticut River and its tributaries, including Pewterpot and Willow Brooks within the core project area. Freshwater lake and stream game fish included brook trout, brown bullhead, calico bass, chain pickerel, lake trout, pumpkinseed, white catfish, white perch, and yellow perch. Carp, northern pike, bowfin, rainbow trout, brown trout, channel catfish, rock bass, bluegill, smallmouth bass, largemouth bass, white crappie, black crappie and walleye were introduced into the region in historic times (Whitworth 1996). Important shellfish species include alewife floater, eastern elliptio, eastern floater, eastern pondmussel, and eastern lampmussel.

Common large mammals included white-tailed deer, grey wolf and black bear (moose and elk were likely uncommon). Small game animals of the area still include beaver, muskrat, woodchuck, raccoon, cottontail and gray squirrel. Fishers and smaller members of the weasel family

as well as bobcat were taken for their pelts. Turkey and passenger pigeon were also important to the diet, while many small birds were taken for their plumage. A number of useful wetland plant species were available just north of the project area in the Hockanum River marshes and possibly within the core development area in areas of low elevation. These included cattail, water plantain and bulrush, all of which would have provided valuable starch calories. Blueberry was likely abundant in mid-summer along the drier upland ridges to the east, while hickory, acorns and chestnut were important resources in the late summer and early autumn.

C. Cultural Context

Although a relatively large number of Native American archaeological sites have been identified in central Connecticut, the understanding of prehistoric cultures in the area remains superficial in many aspects. This is primarily due to the small percentage of sites that have been subject to detailed professional investigation, limiting the conclusions that might otherwise be drawn from the materials recovered. Despite this circumstance, the data accumulated to date suggests that Native Americans living within the area's river drainages adapted their settlement and subsistence patterns to the complex and dynamic ecological conditions over the course of the last 11,000 years. The summary of the project area's culture history, which follows, draws on the current local archaeological record for Connecticut and the greater Northeast.

C.1. Paleo-Indian Period (11,000-9,500 B.P.)

In the Northeast, this period spans from approximately 11,000 to 9,500 years Before Present (B.P.) (Meltzer 1988; Gramly and Funk 1990; Petersen 1995). Paleoenvironmental research in the region suggests that heightened seasonal contrasts occurred throughout the period, with considerably colder winters and warmer summers than at present, and likely significant transient shifts in temperature and precipitation (e.g. McWeeney 1999), particularly at the end of the period. Archaeological sites from this period are characterized by distinctive fluted and lanceolate projectile points and flaked stone assemblages dominated by unifacial tools. Subsistence data for these groups, though still limited, suggest that Paleo-Indian groups exploited a wide variety of resources, possibly including extinct megafauna, as well as smaller species. Archaeological information indicates that Paleo-Indian settlement patterns were characterized by small highly mobile family groups focused on the exploitation of seasonal resources with larger annual population aggregations.

Some of the better-known and best-dated Paleo-Indian sites (Meltzer 1988; Haynes et al. 1984; Levine 1990) include the Vail Site in northwestern Maine (with dates averaging $10,500 \pm 300$ years B.P.; Haynes et al. 1984), the Shawnee-Minisink Site in Pennsylvania ($10,590 \pm 300$ B.P., McNett 1985), the Templeton Site in northwestern Connecticut ($10,190 \pm 300$ B.P., Moeller 1980), and the Debert Site in Nova Scotia (with a tight cluster of dates around 10,600 years B.P.; MacDonald 1968; Stuckenrath 1966). The Templeton Site, located in the Housatonic River drainage in Washington, Connecticut, is one of the best-documented Paleo-Indian sites in southern New England (Moeller 1980, 1984). Moeller suggests that this Paleo-Indian occupation was a small seasonal camp at which a wide range of stone tool manufacturing, tool maintenance, and domestic activities were carried out. In contrast to most Paleo-Indian sites in the Northeast, the occupants of the Templeton Site utilized locally available river cobble cherts and quartz (Moeller 1984).

Several small Paleo-Indian camps have also been identified surrounding Cedar Swamp in Mashantucket, Connecticut. One of these sites, Hidden Creek (72-163), a Late Paleo-Indian short-term camp, has yielded a small but diverse lithic stone tool assemblage which includes several

lanceolate points and a large number of scrapers (Jones 1997). The paucity of archaeological evidence for Paleo-Indian occupation of southern New England likely reflects a combination of the relatively low population density of early foraging groups, small site size, site destruction through natural processes, and a lack of focused archaeological testing specifically targeting these resources.

C.2. Archaic Period (9,500-2,700 B.P.)

By the beginning of the Archaic Period, a shift to warmer climatic conditions, as indicated by pollen evidence, brought about the replacement of Pleistocene animal and plant communities and the introduction of modern ecosystems. In Southern New England, spruce and fir-dominated forests were gradually replaced by mixed forests of pine, hemlock and oak (McWeeney and Kellogg 2001:197). Associated animal species such as deer, turkey and beaver became more abundant in these environments (e.g., Spiess 1992) and seasonally available resources became more predictable.

The inception of the Archaic Period therefore relates to a time of enormous ecological changes in the Northeast (McWeeney 1999). Based on changes in subsistence adaptations, burial ceremonialism and projectile point styles (Snow 1980; McBride 1984), the period is divided into three sub-periods; Early, Middle and Late. Very little is currently known about the Early Archaic (9,500 to 8,000 B.P.). Although slightly more numerous than Paleo-Indian sites, very few Early Archaic sites have yielded more than a handful of stone flakes and a few projectile points (Funk 1996). Recent investigations suggest that large wetland basins presented a wide variety of resources during the Early Archaic Period and likely attracted long-term Native American settlements (Nicholas 1988, Forrest 1999). The Sandy Hill Site on the Mashantucket Pequot Reservation has produced scores of steep-edged quartz scrapers, hundreds of quartz micro-cores and several groundstone tools. Several pithouse features at the site have yielded dates between 9,300 and 8,500 B.P. (Forrest 1999, 2000). In addition, a large number of wetland plant species, including cattail, bulrush, and water lily, have been recovered from the features, suggesting the importance of plant foods in Early Archaic subsistence patterns may have been underestimated in conventional reconstructions (Jones and Forrest 2003). Another well-dated Early Archaic site in the Connecticut is the Dill Farm Site (Site 41-50) in East Haddam, dated between $8,560 \pm 270$ B.P. and $8,050 \pm 90$ B.P. (McBride 1984; Pfeiffer 1986). This site, with a focus on the production of bifurcated base projectile points, marks a cultural shift from the Gulf of Maine Archaic Tradition at this time. This shift is probably associated with the spread of new technologies associated with mast-forest hunters of the Atlantic Slope tradition who were adapted to temperate forest habitats.

The Middle Archaic Period in the Northeast dates from 8,000 to 6,000 B.P. Pollen evidence indicates a trend toward a warmer and drier climate in this period (McWeeney and Kellogg 2001). This climatic shift supported an expansion of nut-bearing or mast tree populations, which in turn encouraged the expansion of important terrestrial game species such as white-tailed deer and turkey, which eat nuts. These ecological changes would have expanded the human resource base and are responsible for a general increase in human population density in southern New England during the Middle Archaic. Projectile point types typical of the period include Neville, Stark and Merrimack varieties (Dincauze 1976, Snow 1980). The best-known Middle Archaic assemblage in New England comes from the Neville Site, located in Manchester, New Hampshire (Dincauze 1976). Neville is a multi-component Middle and Late Archaic site which has yielded radiocarbon dates ranging from 7,740 to 7,015 B.P., associated with the Middle Archaic components. The analysis of lithic materials and preserved subsistence remains indicates that this site may represent a series of successive seasonal camps, possibly associated with anadromous fish harvests.

Middle Archaic data from the Northeast indicate a trend towards special-purpose camps, presumably associated with larger semi-permanent settlements in areas of the highest ecological productivity. Several of these base camps have now been identified. Larger sites, such as Annasnappett Pond (Cross and Doucette 1998) in Massachusetts, are often located on the margins of large interior wetland basins, suggesting these environments continued to support intensive human exploitation (see also Jones 1999). New tool classes during this period include grooved axes and gouges, which suggest an increasing emphasis on woodworking compared with the preceding time periods. The presence of netsinkers and plummets attests to the growing importance of finfish in the Middle Archaic diet (Dincauze 1976; Snow 1980). Evidence for the exploitation of marine resources during the Middle Archaic is still sparse, though this may be attributed to the inundation of near-shore sites on the Coastal Slope.

The Late Archaic Period in the Northeast dates from approximately 6,000 to 2,700 B.P. This period was characterized by a distribution of plant and animal populations which was generally similar to the present (Snow 1980). The Late Archaic is thought to have been a time of cultural fluorescence, as reflected by evidence for population growth, long-distance exchange networks and increased burial ritual (Ritchie 1969; Snow 1980). Presently, the Late Archaic Period is divided into three major cultural traditions: the Laurentian tradition (ca. 5,500-4,200 B.P.), the Narrow-Stemmed tradition (ca. 4,300-3,700 B.P.), and the Susquehanna tradition (ca. 3,800-2,700 B.P.) (Ritchie 1969; Snow 1980). Each tradition is marked by a distinct complex of projectile point types. Phases within the traditions have been proposed following the investigation of a series of well-dated archaeological sites.

The Laurentian tradition is considered the earliest manifestation of the Late Archaic Period in southern New England. The majority of data defining the Laurentian tradition in the Northeast comes from work done by William Ritchie in New York State and on Martha's Vineyard (1969 and 1994). Sites assigned to the Laurentian tradition are characterized by Otter Creek, Vosburg, and Brewerton and projectile points, bannerstones, gouges, adzes, plummets, ulus (semilunar slate knives), and a settlement system in which large camps were typically located in interior riverine areas. Smaller, more temporary and special-purpose sites were situated in a wide variety of environments (Ritchie 1969 and 1994).

Laurentian Tradition groups in southern New England likely followed seasonal patterns of movement first established during the Middle Archaic. Laurentian sites are more abundant in interior southern New England than along the coast, which has led several archaeologists to argue that Laurentian groups were primarily adapted to riverine and upland environments (e.g. Snow 1980, Kingsley and Roulette 1990). The identification of several Laurentian sites in near-shore or coastal island contexts (Ritchie 1994), however, suggests that these people exploited coastal resources on at least a limited basis (e.g. Kingsley and Roulette 1990:204-212).

The Narrow-Stemmed tradition dates between 4,300 and about 3,700 B.P., but may continue as late as 2,900 B.P. in southern New England (McBride 1984:258). This tradition is characterized by: 1) small triangular and narrow-stemmed projectile point forms, regional variants of which include Squibnocket, Beekman, Sylvan Lake, Lamoka, and Wading River projectile points (Ritchie 1971; Snow 1980); 2) a quartz cobble lithic industry; 3) the use of adzes, plummets, and gouges; and 4) a settlement pattern of seasonal camps along rivers and interior wetlands and temporary and task-specific sites found across a variety of environmental zones (McBride 1984). Large seasonal camps located along major rivers indicate multiple, long-term seasonal occupations of these site locations. This suggests a degree of residential stability and territoriality not seen in earlier time periods.

As with the Laurentian Tradition, the diversity of exploited habitats, the abundance of sites, and the evidence for repeated site occupation all suggest Narrow-Stemmed groups in southern New England were utilizing smaller and smaller territories as population density continued to climb (Dewar and McBride 1992). The nature and distribution of sites suggest aggregation during summer months, with seasonal dispersal into smaller groups during the winter (PAST 1980; McBride 1984; McBride and Soulsby 1989). Radiocarbon dates from a number of sites in southern New England suggest that the Narrow-Stemmed tradition may have persisted beyond the traditional chronological boundary for the Late Archaic and potentially well into the Woodland Period (McBride 1984; Kingsley and Roulette 1990).

Finally, the Susquehanna tradition dates between 3,900 and 2,700 B.P. in southern New England. The tradition is characterized by sites containing broadspear and fishtail-style projectile points and knives, including the Snook Kill, Susquehanna Broad and Orient Fishtail varieties. Lithic assemblages typically consist of non-regional varieties of flint, chert, argillite, felsite, rhyolite and quartzite (local quartz was used infrequently). Additional diagnostic artifacts include groundstone tools (including wing-shaped atlatl weights, grooved axes and adzes), carved soapstone bowls, and occasionally cord-marked and grit-tempered ceramics. The larger sites appear to be oriented toward coastal and riverine locales (Dincauze 1975; Snow 1980; Pagoulatos 1986, 1988; Pfeiffer 1992). The Susquehanna tradition is often viewed as an intrusive culture in southern New England. Pfeiffer (1992) has suggested that Susquehanna groups moved into the major river valleys of southern New England, temporarily displacing indigenous Narrow-stemmed Tradition populations. As noted above, radiocarbon dates from several Late Archaic sites in the region suggest some temporal overlap between these traditions, but the relationship between these two archaeologically distinct groups remains an unresolved issue.

A number of Susquehanna tradition cremation burial sites have been identified in southern New England. The earliest dated mortuary site is the Litchfield Site in New Hampshire, which dates to $3,670 \pm 110$ B.P. and yielded Susquehanna broad points and calcined bone (Finch 1964). It is unclear whether a nearby habitation area was occupied at the same time as the cremation. The Flat River cremation site in Rhode Island was radiocarbon-dated to 3,430 ± 100 B.P. (Fowler 1968). Cremation burial sites have also been found in the Charles River and Sudbury valleys of southeastern Massachusetts, including the Mansion Inn Site, the Watertown Arsenal Site, and the Vincent Site (Dincauze 1968). Burial ritual in this period has received a great deal of attention in southern New England (Leveillee 1999, Pfeiffer 1983, 1984, 1992, Pagoulatos 1986). The bestdocumented of these sites is the Griffin Site in Old Lyme, with a range of radiocarbon dates between 3,495 and 2,985 B.P. (Pfeiffer 1992). The Carrier Site, located on a terrace edge overlooking the Connecticut River floodplain in Glastonbury, has been radiocarbon-dated to 3,550 ± 90 B.P. (Pagoulatos 1986). Both sites yielded caches of blades, form tools, steatite (soapstone) vessels and human bone. The complexity of burial ritual, the establishment of long-distance trade networks, and highly redundant settlement patterns suggest that individual Late Archaic groups were increasingly circumscribed by their neighbors and likely competed directly or indirectly for a variety of resources.

C.3. Woodland Period (2,700-450 B.P.)

In the Northeast, the Woodland Period is characterized by the increased use of pottery, the introduction of tropical cultigens (maize, beans, and squash), and an increase in site size and complexity, suggesting a trend toward greater sedentism and social complexity. Although

traditionally viewed as a complex of profound cultural and economic changes revolutionizing Native American lifeways, recent research points to a strong line of continuity linking Woodland cultures to preceding Archaic foraging groups in southern New England. The Woodland Period has been subdivided into Early, Middle, and Late periods on the basis of ceramic styles and political and social developments (Ritchie 1969; Snow 1980).

In the Northeast, the Early Woodland Period dates between 2,700 and 2,000 B.P. The period is characterized by the widespread use of thick-walled ceramics and increasingly complex burial ritual and engagement with wide-ranging trade networks linking southern New England with much of the Mid-Atlantic and Mid-Continental regions (Griffin 1967; Dragoo 1976; Snow 1980, Loring 1985). Exotic trade goods are often found on large Early Woodland sites in the region, suggesting the maintenance of trade may have been a significant factor in determining site location and season of occupation during this period. Adena-related artifacts such as block-end tubular pipes similar to those of the Midwest have been recorded at several sites, though it is not known whether these materials signify an enduring Adena presence in the region or whether they are related to seasonally occupied trading outposts established to facilitate exchange between indigenous southern New England groups and Adena traders.

The Middle Woodland Period in the Northeast dates from 2,000 to 1,000 B.P. and is characterized by increased diversity in ceramic style and form and continued long-distance exchange networks, especially reflected in the distribution of jasper trade bifaces (Snow 1980). Ritchie noted an increased use of plant foods such as goosefoot (*Chenopodium sp.*) in the Kipp Island Phase in New York, which he suggests had a substantial impact upon social and settlement patterns. Ritchie further noted an increase in the frequency and size of storage facilities, which may reflect an increased trend toward sedentism (Ritchie 1994; Snow 1980). All of these factors may relate to increased population density and a shift to incipient cultivation of indigenous plant species. Middle Woodland sites are relatively rare outside of coastal and near-coastal contexts and when located usually represent temporary hunting-oriented sites.

The Late Woodland Period in the Northeast dates from 1,000 to 350 B.P. and is characterized by the intensive use of maize, beans, and squash; changes in ceramic technology, form, style, and function; population aggregations in villages along coastal and riverine locales; increased sedentism; and the use of upland zones by smaller, domestic units or organized task groups. Not all of these regional developments have been identified in southern New England. Late Woodland Period artifact assemblages include Levanna projectile points and finely made, brushed, stamped, incised and cord-marked ceramics (Ritchie 1994; Snow 1980).

Late Woodland occupations are found distributed across a range of riverine and upland zones, with larger settlements along the major rivers and shoreline areas. Microenvironments utilized include floodplain wetlands, coves, tidal marshes, upland streams and interior wetlands. Large villages tend to be situated along major rivers, estuaries and tidal marshes. Smaller, temporary camps are situated along upland streams and inland wetlands. Populations appear to have aggregated in large villages during much of the year. Temporary camps were established on a seasonal basis by smaller domestic units or organized task groups in upland zones. Work at the Morgan Site (6-HT-120) on the Connecticut River floodplain in Rocky Hill has provided valuable information on subsistence activities. Large quantities of maize were recovered from undisturbed cultural deposits which also yielded a wide range of ceramics, Levanna projectile points and radiocarbon dates of 675 ± 75 B.P. and 630 ± 70 B.P. (Lavin 1984). The 6-HT-116 Site, located in South Windsor, has been radiocarbon-dated to 460 ± 100 B.P. and 445 ± 90 B.P. The site yielded

a single kernel of maize (McBride 1984), but produced numerous wild plant remains, including walnut, hickory, goosefoot, purselane, carpetweed, and elderberry. Although cultigens are present, wild plant foods clearly contributed significantly to the aboriginal diet during this time.

C.4. European Contact and Historic Native American Period

The Contact Period (ca. 1600-1650) includes changes in traditional social and economic practices of aboriginal populations associated with the introduction of European goods and diseases which reduced many Native populations by as much as ninety percent (Snow 1980). Shifts in political alliances with the introduction of new economically-driven pursuits and changes in the demographics of local populations had significant impacts on the stability of the Native populations of the region.

Information recovered from Late Woodland sites in southern New England indicate a fairly stable population base along the Connecticut, Thames, and Housatonic Rivers by 1300 A.D. An increase in site numbers and site size as well as indications of extended occupations at the same localities suggests an overall increase in population and settlement patterns characterized by large semi-sedentary villages with specialized seasonal occupations occurring in inland settings. A coalescing of this way of life, though initiated in the Middle Woodland Period, occurs most certainly in Late Woodland times.

The years of initial European settlement in the region between 1620 and 1650 were significant in redefining the geopolitical map for existing Native American groups in Connecticut. The introduction of a market economy related to the development of a full-fledged fur-trading industry led to shifts in alliances and power struggles between the various Native American groups occupying the state. The introduction of epidemic diseases had a profound effect on Native demographics, as decimated populations struggled to continue traditional lifeways. Encroachment of land by newly arrived European settlers also contributed to the rearrangement of the social landscape.

By the time of European contact, the Pequots dominated much of eastern Connecticut, including the central Connecticut River Valley, and also assumed economic control of much of the southern portion of the state. Ethnohistorical documents indicate that the Pequots claimed lands west of the Connecticut River, and for a time assumed control of the Hartford-area "River Tribes" who originally inhabited the central valley. This was likely accomplished to favor economic dealings with European traders, and control of access to wampum material may also have been a factor (Jameson 1967: 86). Disputes with other Native groups, particularly with the Narragansetts and the Mohegans, over control of wampum-production areas and European trade led to conflicts between the groups and their allies. Attempts to control the fur trade market, particularly along the Connecticut River, led to rising friction between the Pequots and Dutch and English traders. Soon, open confrontations resulted in casualties on both sides.

The East Hartford area was under the control of the Podunk Indians during the period of Dutch and English colonization. The Podunks were part of the loose confederation of River Tribes associated with the central Connecticut River Valley. Historic records suggest the Podunks were driven from their lands by the Pequots by about 1630. In 1631 a Podunk calling himself Waghinacut went to Boston to entreat the English to settle the Hartford area, clearly as a means of seeking protection from the Pequots. Massachusetts Colony Governor Winslow had the territory examined that year, but it was not until 1633 when stories of the rich Dutch fur trade along the Connecticut River prompted English settlement in the greater Hartford area. The English settlers purchased land

directly from the River Tribes, which raised the ire of the Pequots. Between 1634 and 1637, escalating confrontations between the Pequots and Dutch and English traders led to a series of retaliations that would culminate with the Pequot War of 1637 (Hauptman and Wherry 1990).

The Podunks are said to have had two major villages in East Hartford. The first on the north bank of the Hockanum River east of the Center Cemetery and the second on the north bank of the Podunk River close to its mouth with the Connecticut. Both villages are said to have had stockade forts built upon a neck of land extending into wetlands (Spiess and Bidwell 1924: 6). The first of these lay less than a mile north of Rentschler Field. Spiess's map of "Indian Trails and Villages" also indicates a smaller village site just south of Willow Brook and east of Whitney Street, in the northwestern portion of the project area (Spiess and Bidwell 1924: 13). Spiess's map (Figure 20) indicates a number of similar lesser villages in the East Hartford and Manchester area, including two along Pewterpot Brook east of the project area. While the larger village sites appear well-substantiated, some of the smaller "villages" represent areas where farmers commonly encountered artifacts in their fields while plowing. In 1927, when Spiess wrote his history of Manchester, little was understood of the time-depth of Native prehistory, and most people assumed artifacts found were from the recent past. In fact, most area collections contain a wide array of artifacts that date from the Late Archaic (ca. 5,000 years ago) through the Woodland period.

Spiess and Bidwell offer additional information regarding the location of Native cemeteries in East Hartford. The so-called "Royal Burying Ground" was located at the intersection of Main Street and Ellington Road. A second was located south of the Podunk River "near Main Street" (Spiess and Bidwell 1924: 27). Goodwin, writing in 1879, states that skeletons had been exhumed along the Podunk River "a few years earlier" and that the bodies had been laid on their sides, facing south in flexed position. The human remains were associated with remnants of blankets, bark coverings, a small brass kettle, a hatchet, a gun barrel and lock, a number of glass bottles, leaden tobacco pipes, strings of wampum, small brass rings, a brass comb and glass beads (Goodwin 1879: 18-19). Importantly, Goodwin states that these materials were stored with the Hartford Historical Society. The items clearly represent Contact period graves, probably associated with the nearby village north of the Podunk River. The last local cemetery is said to lie west of Main Street along Ensign Street, near the Connecticut River; that is, directly west of the Pratt and Whitney plant (Figure 22).

In 1656, a well-documented quarrel erupted between the Podunks and Mohegan leader Uncas as documented in the Colonial Records of Connecticut (Volume 1, page 304, as cited in Goodwin 1879). The dispute began with the murder of a sachem of the Mattabassett Indians of Middletown by a young Podunk named Weaseapono. Sequassen, sachem of the Hartford and Wethersfield Indians, unable to convince the Podunk sachem Tantinomo to hand over the culprit, went directly to Uncas for aid. Uncas was recognized by the Native and English of the time as a powerful political figure, and he seems to have had ongoing quarrels with the Podunks.

The sachems met at the General Court of Hartford in May 1656 in an attempt to resolve the dispute under English arbitrators. Uncas demanded the death of ten Podunks allied with Weaseapono, but Tantinomo refused, complaining that Weaseapono had rightfully avenged the death of his own uncle. The Podunks offered wampum in payment, but Uncas refused and the matter became stalemated after arguments on both sides. The court finally elected to let the Indians resolve the matter themselves, with the promise that "they should not fight on this side of the River of Hartford, nor hurt any of the English houses or any of theirs of the other side of the river."

Uncas gathered his men and marched against the Podunks, who apparently mustered an equal

number of fighters. The war parties are believed to have met near the fort on the Hockanum, less than a mile from Rentschler field. Uncas refrained from a fight, but threatened Tantinomo that he would call on the Mohawks for aid. To convince them of his threat, he seems to have had a Podunk wigwam burned and had Mohawk weapons left on the site. This convinced Tantinomo to hand over Weaseapono, ending the conflict (Goodwin 1879: 23-25, citing DeForest 1851). It seems this dispute was sufficiently frightening for the Podunks so that many fled the region, apparently seeking refuge among the Pocomtucks of Deerfield (Spiess and Bidwell 1924: 22). They returned only after Uncas had promised the commissioners of the colony to allow them to live in peace (Goodwin 1879: 26).

In 1659 former Podunk lands in East Hartford purchased by the Hartford colony were formally laid out. Land conflicts ensued when Thomas Burnham and Jacob Mygatt purchased additional lands directly from Tantinomo. These disputes were problematic enough that it was resolved in 1660 that no individuals should buy or rent lands from the Podunks themselves. Further land-related conflicts between the Podunks and Uncas occurred in 1666, apparently when Mohegans hunted within Podunk territory. These ended in an amicable resolution, but underscores the threat of loss of land to all Native people of the region at this time. Peace with the Mohegans was cemented shortly after this when another important Podunk sachem, Arramamet, pledged his daughter Sowgonosk to Joshua, third son of Uncas. Arramamet thereby gave Uncas all of his lands, on the condition that they would be given to the heirs of Sowgonosk (Goodwin 1879). It is likely that a dead child carried in a funeral procession observed in 1680 was a child of Sowgonosk. The child was said to have been carried from Norwich to the "royal cemetery" on Main Street by "a large band of Indians with blackened faces" (Spiess and Bidwell 1924: 27).

In 1675 King Philip's War erupted, and the Podunks sided with Philip against the English settlers. They did not, however, bring the war to East Hartford. Rather, as many as 200 armed men (or as few as 60 depending on the source) joined Philip's fights in Massachusetts and Rhode Island, but it appears few returned. The Englishmen lived in terror during the period of the war, garrisoning their homes and keeping livestock indoors. The war resulted in at least one death in East Hartford (G. Elmore) and another local man was shot and injured (William Hill). The perpetrators of these raids were caught and executed (Goodwin 1879: 31-34). The loss of young men associated with King Philip's War played a large role in the disappearance of the Podunk tribe. One of the last documents relating to the Podunks is from 1722, when the "wife of Squinimo, an Indian man" registered a land dispute in the public records (Goodwin 1879: 34). DeForest believed remnants of the tribe lived along the Hockanum River in 1745, but had left to join western Connecticut tribes by 1760 (Goodwin 1879: 37). An important anecdote relating to one of the last Native settlements in East Hartford is noted by Goodwin in a footnote. Goodwin states that "a few Indians lived in a wigwam about eighty rods south of Mr. Geo. W. Pratt's house on Silver Lane, about 1775-80" (Goodwin 1879: 37). The house of George Pratt is plainly visible on the historical atlas of East Hartford of 1869. Georeferencing this location indicates that the wigwam is located clearly within the project bounds, at ca. N1620E1020 on the soil probe test grid (Figure 21). This precise location falls just south of the southern branch of Willow Brook, but given the approximation of 80 rods it is just as likely that the wigwam lay between the two branches. Soil probes have determined that both of these areas contain intact buried soils, so that there is a realistic probability of relocating the wigwam site. If this site could be found, it would prove to be of tremendous historic significance as a reflection of Native adaptation to an overwhelming Euro-American presence.

Generally, the number of 19th- and early 20th-century references to nearby villages and burial

grounds strongly suggests a dense Native presence in the area of East Hartford between the Pewterpot Brook and the Podunk River during the Contact period. It is very possible that remains of Native sites are still present within the Rentschler Field project area. Many of these may represent small, temporary sites of the type used for thousands of years in the area along the tributaries of the Connecticut River. Others may, however, include complex settlement remains such as 17th-century villages and perhaps even cemeteries. The above history indicates that a great deal of care must be taken in the testing of the project area, which lay at the heart of the Podunk nation.

D. Subsequent Historic-Period Developments

East Hartford, which was part of the town of Hartford until 1783, began to be settled in earnest by the English in the 1660s, although a few families are known to have taken up land there even earlier. "Hockanum" appears as a place name in the 1640s, as does Pewterpot Brook. By 1699 there were enough families to constitute a church society, Hartford's third, the boundaries of which included not only present-day East Hartford but Manchester as well. The bulk of English settlement appears to have been north of the Hockanum River, but by 1731 both Silver Lane and the south part of Main Street had been laid out as town highways (the latter is believed to have followed a pre-existing Indian trail on the east side of the river).

The houses in this vicinity, a farming area on the outskirts of the more densely built center part of town, were widely scattered, as can be seen from the detailed map of the area prepared by the French Army during the American Revolution (Figure 7). At that time, Silver Lane took a sharp bend just east of the present-day entrance to the Pratt & Whitney plant, resulting in the road taking a more southerly course through the northeast part of the project area, where it intersected Forbes Street further to the south than it does today. Silver Lane was straightened to the approximate alignment it has today in the 1790s, as part of the state's effort to improve important through-roads (Harper et al. 1999: 66).

The French army camped on the fields along Silver Lane in 1781 in three separate components: an infantry camp on the north side of Silver Lane between Main Street and the Route 15 overpass, corresponding to present-day "Rochambeau Apartments" and other residential development; an infantry camp some distance south of Silver Lane, approximately where the Plain Drive/Jaidee Drive neighborhood is today; and an artillery park occupying the land where Warren Drive is today, along the northwest border of the project area (Figure 8). Both infantry camps included a small amount of field artillery. The French described the area as one of woods and fields crisscrossed by several small brooks. Because of the extent of disturbance posed by modern residential development, these areas were not tested in the archaeological survey of French Army encampments (Harper et al. 1999).

Although the area appears to be relatively flat, apparently there was enough topographical relief to allow both Willow Brook and Pewterpot Brook to power small water-powered enterprises. The Blodget map of 1792 (Figure 9) shows sawmills on both brooks in this general vicinity, though the scale and precision of that map do not allow one to say whether they lie within the bounds of the project. An early 19th-century map (Warren and Gillet 1813, Figure 10) shows an oil mill on Pewterpot Brook almost certainly within the project area, as well as a gristmill close to where the brook crosses Main Street, out of the project area.

Hockanum Cemetery was established to serve the growing number of families in this area around 1781 (Slater 1996: 166) (Photo 2).

In the 19th century, the number of houses steadily increased (Figures 11-13), particularly along Main Street and the part of Silver Lane near its intersection with Main Street. Main Street at mid-19th-century already had a school and several stores foreshadowing its eventual development into a commercial area, as well as a number of "shoe factories," which probably were small shops or houses where shoes were assembled by hand from pre-cut pieces of leather (Connecticut made millions of pairs of shoes a year in the antebellum period in what was essentially a cottage industry). At the same time, the rest of Silver Lane remained agricultural, with only scattered homesteads of farming factories. At this time, the interior of the project area was opened up a little by Willow Road and a connecting road north to Silver Lane, and for a time there was a similar interior road leading west from the bend in Forbes Street to a couple of houses associated with the Vibert (or Vibbard) family (Figures 11 and 12). The latter road does not seem to have persisted in any form.

After the civil war the fortunes of Silver Lane and Main Street farmers improved as they engaged in tobacco cultivation. Tobacco barns appeared in the fields around the turn of the century, and eventually a large concrete commercial tobacco warehouse was constructed on Willow Road. Many of the elaborate Victorian houses on Silver Lane reflect the wealth injected into the local economy by tobacco raising.

The 20th century brought three major changes to the area. First, the proximity of a large urban market encouraged the cultivation of vegetables on the part of both Yankee farmers and farmers of European immigrant heritage. Cucumbers, squash, and tomatoes were grown in abundance along Silver Lane right up until the end of the 20th century. In 1902 Frank Gould took advantage of local vegetable farms by starting a pickle-packing business known as the Silver Lane Pickle Company, located in the vicinity of today's Rentschler Field Stadium. The factory had its own ice pond and ice house, numerous tanks, a wagon shed, a blacksmith shop, and a large 2 ½-story building where pickles were put up in jars (Figure 14). In 1925, the company pickled 90,000 bushels of cucumbers (Paquette 1976: 218). The business, which was the subject of a contract case decided by the U. S. Supreme Court (Simmons v. Swan, 1927), continued until about 1960.

Secondly, the population growth of Hartford, which doubled in size between 1900 and 1930, encouraged the development of residential development in nearby suburbs such as East Hartford. Over the same period, the population of East Hartford nearly tripled, growing from 6,406 to 17,125. The area bounded by Main Street, Willow Brook, Silver Lane, and Mercer Avenue was one of the new neighborhoods, densely built with a grid of streets, small lots, and houses in the Bungalow, Foursquare, and Colonial Revival styles (Figure 15). In 1928 the Town of East Hartford built the Silver Lane School (actually located on Mercer Avenue, Photograph 3), to serve the area's growing numbers of school children. The area was served by a streetcar line, superceded by bus service in 1939, that ran along Main Street to Glastonbury.

Finally, in 1930, the Pratt & Whitney Aircraft Company, a component of the United Aircraft Corporation (now United Technologies) relocated its Capitol Avenue aircraft-engine plant from Hartford to East Hartford, building a massive new manufacturing facility designed by the pioneer industrial architect, Albert Kahn of Detroit. Occupying hundreds of acres of former farmland, the plant included a multi-story administrative buildings (Photograph 5) and huge steel-framed openplan one-story manufacturing buildings with Kahn's signature "butterfly" roof monitors (Figure 16). Originally, the plant served two other components of United Aircraft, the Hamilton-Standard Company, a manufacturer of propellers, and the Chance-Vought Corporation, an aircraft manufacturer, but as the aircraft-engine business grew, the other companies were moved to their own facilities. Pratt & Whitney produced the "Wasp" rotary-piston engine, one of the most

successful engine designs of all time, designed by Frederick Rentschler and his associates starting in 1925. During World War II, the Wasp R-2800 and its variants is thought to have made up more than half the horsepower installed in American military aircraft. Tens of thousands of people worked at Pratt & Whitney during the war, both in East Hartford and in several satellite facilities built to relieve the pressure on the main plant. It was in these years that the company converted its grassy airfield into an airport with concrete 5,000-foot runways, new hangars, and a control tower (Roth 1981: 89-90). After the war, Pratt & Whitney developed one of the country's first jet engines, the J42, and repeated the success of the Wasp with the J57, which powered numerous military and civilian jet aircraft in the 1950s and 60s. Although the company continues to develop new jet engines and is one of only three major suppliers to a world-wide market, it no longer uses Rentschler Field, part of which is now occupied by the University of Connecticut football stadium.

E. The Distribution of Known Archaeological Sites

There is no mandate to report archeological sites to the state, this is because the site files do not necessarily represent all of the archaeological sites present or even known in a given area. However, the files are an extremely important resource in that they generally provide information on specific prehistoric or historic-period sites and also indicate patterns of site location relative to environmental features. For example, even if no prehistoric sites are located directly within or immediately adjacent to a project area, the site files may reveal a pattern of Archaic Period temporary campsite locations a certain distance from fresh water sources. Established local patterns are strong and proven indicators of archaeological site potential.

The Rentschler project is unusual in that a local resident, Mathias Spiess, carefully collected and recorded information about Native American sites in the early 20th century (Spiess and Bidwell 1924). Relying on elderly informants and his own witnessing of archaeological remains, Spiess documented the locations of numerous local Native (i.e., Podunk) camps, wigwam sites, villages and burials (Figure 22). Unlike most antiquarian writers, however, Spiess made a map of the site locations (along with Percy Bidwell) in 1924, and he wrote an article about the sites in a 1937 Bulletin of the Archaeological Society of Connecticut. And, most unusual, Spiess recorded the human and artifactual remains present at each site and the repositories to which the remains were sent. With additional research and luck, it may well be possible to track down some of the remains documented by Spiess.

As noted below, many of Spiess's recorded Podunk sites are in or very near the Rentschler project. This is not surprising, given the area's prime location between several tributaries of the Connecticut River, itself only a half-hour walk away. In 1997 PAST assigned site numbers to Spiess's reported sites and located them on USGS topographic maps. None of the site locations has been tested to determine if any site remnants exist.

Twelve archaeological sites are recorded in the files of the SHPO/Office of State Archaeology (OSA) within a one-mile radius of the project boundary (Figure 23). One of these is the site of the historic George Risley house at 236 High Street, built in 1670 by William Hill who had been wounded in a local King Philip's War confrontation. The house itself was dismantled and moved to Bolton in 1992. The remaining sites are all Native, dating to the prehistoric and Contact periods.

Site 43-9, referred to as the "Hockanum Village," is located within the project area, tentatively placed roughly central to Runway 4/22. The state site form references Mathias Spiess's 1937 account in the *Bulletin of the Archaeological Society of Connecticut* (Spiess 1937). The exact

location of this site is not well-documented, however, and in fact it may represent part of the site recorded as Site 43-22. Mapped south of Willow Brook in the northern portion of the project area, this site location was listed based on Spiess's map of "Indian Trails and Villages," which indicates a Podunk village at this location (Spiess and Bidwell 1924) (Figures 20 and 22). This is probably the more accurate of the two locations. Unfortunately, Spiess provided little concrete information about how this site is associated with the Podunks.

Site 43-13 lies just west of the Pratt and Whitney plant and is documented as the Ensign Street burial grounds located close to the river (Figure 23). The site references Spiess's 1937 article, and the location is visible on his 1924 map (Figure 22). Archaeologist Fred Warner, who listed the site in 1979 when the state files were updated, notes that one skull from this burial ground had been housed at the Yale Peabody Museum.

Nearly a mile south of Rentschler Field, Site 43-1 represents a probable Middle Woodland camp (ca. 500 AD). The site is located on the south bank of Porter Brook below Maple Street (Figure 9). The only artifact associated with the site is a probable Steubenville (Fox Creek) lanceolate point.

East of Rentschler Field, Site 43-24 is based on the Spiess map of 1924, upon which he noted a small village location between two branches of Pewterpot Brook, but provided no additional details (Figure 20). The site is on Forest Street in an area well-developed with residential housing. Site 43-25 represents another of Spiess's mapped small village locations on the south bank of Porter Brook, just over a mile from Rentschler Field south of Hills Street (Figure 23).

Site 43-12 lies northeast of the project area on the old Leone Farm west of Forbes Street, now home to Showcase Cinemas. Two chert projectile points, including a Late Woodland Levanna point (ca. 1000 AD), were recovered here while the area was still a farm (Figure 23).

Sites 43-4, 43-5 and 43-15 provide evidence of relatively dense Late Archaic and Woodland period site use along the south bank of the Hockanum River in the Roberts Street area (Figure 23). It is likely that sites are nearly continuous along the banks of the river in this area, although many have been destroyed by construction, especially that associated with I-84.

Less than a mile north of Rentschler Field, Site 43-8, on the north bank of the Hockanum, represents one of the two main Podunk Villages described by both Spiess and Bidwell (1924) and Goodwin (1879) (Figures 20 and 22). The site is commonly referred to as the "Second Largest Village." Spiess says the village was associated with a palisaded fort encompassing about two acres, protected on three sides by swamp (Spiess and Bidwell 1924: 6; Spiess 1937). Spiess (1937) states that this was the fort of Tantinomo, and according to Goodwin (1879: 24), it is here that the standoff with Uncas' party occurred in 1656. Goodwin is reported to have had a personal collection of artifacts from the site.

This relatively small number of reported local sites should be interpreted as but a sample of the overall archaeological sites in the vicinity. Most of the sites were historically documented, and the others primarily represent haphazard finds of artifacts by farmers in their fields. Only Sites 43-4 and 43-5 were even surface-collected by professional archaeologists, and none have received even preliminary subsurface reconnaissance survey. It is very likely that despite the extensive development in this part of East Hartford, a large number of significant archaeological sites remain to be discovered. The Rentschler development project area likely represents one of the largest and least disturbed areas in this important part of town.

In prehistoric times, the area of Rentschler Field would have likely been used as a location for temporary residential camps on the land between Willow and Pewterpot Brooks. Foragers here

had access to a variety of resources from the nearby Connecticut River and its eastern tributaries, the surrounding terrestrial hardwood forest, and nearby wetlands. The project area is also relatively close to upland hunting and nut-gathering locations to the east. Most prehistoric human use of the project area probably included short periods of food-collecting and hunting, overnight hunting and transitory camps, and possibly longer-term seasonal occupations. When agricultural communities began to develop along the Connecticut River after about 1000 AD, the local area may well have supported kin-based small hamlets and larger villages. In fact, Sites 43-09 and 43-22 likely refer to a single large village that was located within the Rentschler Field project area (SHPO/OSA site files and Spiess and Bidwell 1924: 13). During the early 17th century the project area lay in the midst of conflicting Dutch, English and Pequot economic interests. By the 1640s most of the disputes were resolved to the point that the English settlement at Hartford become established. The lands on the east side of the river were used as meadow and timber lots. A resolution of 1641 restricting "hoggs and swine" from the east side of the river to protect corn and meadow lands indicates that the area of East Hartford was already an agrarian asset to the Hartford colony (Goodwin 1879: 43). By the early 1650s, Hartford's population had spilled across the river and the first permanent Euro-American settlements were established (Goodwin 1879: 49), changing the landscape forever.

V. RESULTS: INITIAL PHASE Ia/EIE FIELDWORK

A. Initial Walkover Survey

In the initial Phase Ia survey conducted in September 2005, and reported in the EIE, AHS conducted a walkover inspection of the core development area, plus the portion of Silver Lane to be widened. In accordance with the *Primer*, the purpose of the walkover inspection was to identify areas of relative archaeological potential based on observable natural and cultural features and information gathered in the background research phase. As indicated in the EIE and in Section IV of this report, the background research suggested that undisturbed soils within the project area have a high probability for yielding important archaeological information, for both the prehistoric and historic periods. This assessment was based on the following factors:

- The Connecticut River Valley is known to have been occupied by relatively high populations of people for several millennia.
- The specific topographic conditions of the project area the presence of two streams, relatively level ground, and the nearby confluence of the Hockanum and Connecticut Rivers - are known to be correlated with Native American occupation.
- The project area has been documented as the locale of at least one Podunk Indian village at the time of European contact and later.
- In the historic period, both Main Street and Silver Lane were early highways lined by the farmsteads of English families, raising the possibility of historic-period archaeological features such as foundations and wells and archaeological deposits such as food-waste middens. During the Revolutionary War, the French Army under the command of Rochambeau camped along Silver Lane. While the major part of the French encampment appears to have been overlaid by modern residential construction, any undisturbed soils within the area of the French camps may well contain at least some artifacts from that episode.

Although the existing roadways are wide (at least four lanes along Main Street and Silver Lane), experience has shown that significant prehistoric and historic archaeological deposits may still remain in place alongside the modern highway right-of-way. The presumption, therefore, must be that undisturbed soils in areas of transportation improvements possess high sensitivity for archaeological resources.

A significant portion of the total acreage is currently developed as an airfield and surface roadways. The undeveloped land includes extensive areas of open field surrounding the airfield in the center of the project area, and wooded land along the eastern boundary. The overall topography is remarkably level, a legacy of the final glaciation in the Connecticut River Valley during which thick glacial lake and outwash sediments were deposited here. A network of artificial drainage ditches now extends throughout much of the project area, lowering the water table in many formerly

wet areas. The impact of these ditches on the present-day soil conditions is most pronounced in the eastern third of the project area, where historic maps and soil profiles indicate consistently wetter conditions once prevailed outside mapped wetland boundaries. Prior to the construction of the runways in 1941, surface water drainage in Rentschler Field was controlled by two main streams. Pewterpot Brook drained the southern half of the field, while the northwestern portions were drained by Willow Brook. Both streams have been extensively modified by the development of the project area, including the reorientation of the original stream courses through ditching and the routing of channel discharge through underground conduits.

Despite the modifications undertaken at Rentschler Field, its original flat topography and location in a known area of prehistoric sensitivity suggested that, like the Westerly and Groton airports, intact soils and associated archaeological sites may be present. The intact soils are likely to be erratically located as a consequence of the nature of the airfield construction. In other words, the burying of brooks, filling of wet and low areas, and construction of ditches and runways resulted in spotty impacts, not consistent project-wide land disturbance. Prehistoric sites were found at both the Westerly and Groton airports (Clouette and Jones 2004; McBride et al 1979), which were formed, like Rentschler Field, out of essentially flat landscapes and are characterized by intermixed pockets of disturbance and soil integrity.

In order to confirm the presence of intact soil "pockets," limited soil sampling was done in the initial Phase Ia survey. As discussed below, the soil sampling was effective at both confirming archaeological sensitivity and narrowing the areas of sensitivity.

B. Initial Soil Probe Investigations

Using the data gathered in the background research and walkover inspection, AHS placed 37 soil probes in the core project area: 29 in the former airfield and eight within the wooded area east of the airfield (Figure 3).

A simple recoding system was used for the soil probes completed during the initial walkover survey of the project area, as the objective of this phase in the investigation was to determine whether there were any intact and potentially archaeologically sensitive soils were present within the project area. The individual probes were located to provide a general sample of the project area with an emphasis on the airfield, where the extent of soil disturbance was expected to be most significant. The observed soil profiles from each probe were classified as "Disturbed," "Intact," "Intact Subsoil," or "Wetland". No profiles were recorded for these probes. The small volume of soil extracted from the ground was deposited at the surface after the integrity of the profile was determined. Each probe was located on a printed map of the project area as they were completed and subsequently digitized to incorporate the results in the AHS GIS system (Figure 3).

The results of the initial probe investigation demonstrated the presence of intact soils within both sampled sections of the project area. Twenty-one of the thirty-seven probes (57%) contained potentially archaeologically sensitive soils. Sixteen of the probes revealed fully intact soil profiles with a well-defined plowzone overlying dark yellow brown subsoils. An additional five probes showed a variable thickness of fill or redeposited soils overlying intact subsoils. Fourteen of the probes (38%) showed completely disturbed profiles, and the remaining two probes (5%) encountered gleyed wetland soils or organic mucks.

The results thus established the preservation of intact and archaeologically sensitive soils within the core development area. Although these probes were not intended to provide a systematic sample of the entire project area, the percentage of probes with intact profiles or intact subsoils

strongly suggested that a substantial proportion of the airfield retained stratigraphic integrity. This, coupled with the background investigations which demonstrated both the ecological richness of the project area and the actual settlement of the project area by Native Americans, underscored the archaeological potential of all intact soils. The sample density within the wooded lots to the east of the airfield was much smaller, but also indicated the presence of intact well-drained soils with moderate to high archaeological sensitivity. The distribution of disturbed soils within the sampled area also demonstrated that some sections of the project area were unlikely to retain any significant archaeological resources. The most obvious of these extensively disturbed areas was Development Area A2, located between the two branches of Pewterpot Brook, at the south end of the airfield. Both the soil probe investigation, and the walkover survey indicated the original soils within the majority of this lot have been obliterated. This, coupled with the presence of soil contamination identified within the few potentially intact sections of the lot during environmental investigations of the property, suggested additional archaeological survey within A2 would be neither prudent nor warranted.

The initial soil probe investigations also suggested that the northern half of the airfield retained less intact soils than the southern half, however the sample was inadequate to either quantify or verify this apparent pattern.

Seventeen of the 29 airfield probes (59% of the total) revealed either intact plowzone and subsoils or intact subsoils (Figure 3). Fill deposits or unweathered glacial deposits were encountered in the remaining twelve samples, suggesting that grading in the area was largely restricted to the flattening of very minor topographic variation. This interpretation is supported by an examination of the portion of the project area south of the airfield and north of the southern branch of Pewterpot Brook, where a largely unaltered landscape was observed. In this area, the existing land surface is characterized by fine-scale topographic variation amounting to approximately one meter of total relief. Prior to the construction of the runways, this type of landscape likely extended over the majority of Rentschler Field and would have required only minor changes to accommodate the existing configuration.

The eight soil probes in the wooded portion east of the airfield indicated that much of the area was once wetland, as dark partially decomposed organic topsoils were found overlying gleyed sands in low-lying areas. Observed drainage ditches here have been excavated between one and two meters below the original ground surface and have likely caused a significant drop in the local water table. Soil tests on the drier knolls indicate intact soil profiles. Tree size here suggests these presumed vegetated agricultural fields have not been disturbed for at least 70 years.

C. Results of Initial Walkover and Soil Probe Survey

Based on the visual inspection of the core development area and the general area of the proposed Silver Lane widening, and the soil probe results, AHS concluded that 1600 linear meters along Silver Lane would be archaeologically sensitive for both prehistoric sites and historic-period sites, particularly those associated with the 1780/81 French army encampments. Sensitivity within the 1600-meter-long roadside is likely spotty due to development-related disturbance, but only archaeological testing could isolate intact buried cultural resources.

The initial Phase Ia survey also estimated that 285 acres of the core development area had moderate to high archaeological sensitivity (Figure 4). Because the project area's landscape is a complex mix of disturbed and intact soils, the initial assessment was necessarily generous. However, performing the next level of archaeological survey in the project, as required under CEPA,

would have had to use the 285 core development acres and 1600 linear meters of roadside improvements as the mandatory Phase Ib testing areas. The *Primer* requires the excavation of test pits at 15-meter intervals, which would amount to approximately 5700 test pits, an extremely expensive undertaking. AHS therefore proposed that the Phase Ia survey be intensified and expanded to include an additional 300 soil probes in the open areas of the core development area (the former airfield), where soil integrity is variable due to the nature of the original landscape and its development. AHS further proposed to conduct a more intensive inspection of the wooded portions of the core development area to refine the sensitivity assessment and hopefully reduce the mandatory Phase Ib testing effort (Harper 2005).

BEC and DECD agreed to the proposed intensified Phase Ia survey, specifying that AHS should perform the extra work in the following order of priority: 1) the open 32.5-acre former ING parcels (Development Areas A1 and A2); 2) the open 62-acre Cabela's parcel (Development Area C1); 3) the wooded 9.7-acre magnet school parcel (Development Area H2); and 4) the access roads (ca. 15,000 feet long, 150 feet wide) associated with Core Development (ca. 44 acres). About 100 of the expanded soil probes would fall into the three open areas of priority, with the remaining 200 probes placed in the open core areas of lesser priority. No cores would be placed in the wooded portions of the project, as the preliminary sampling here suggested they would not be cost-effective.

VI. RESULTS: INTENSIFIED PHASE IA SURVEY

The intensified Phase Ia survey was conducted between October 2005 and February 2006. The survey focused on the four designated areas of priority first, in descending order of importance:

- A. The former ING parcel (Development Areas A1 and A2)
- B. The Cabela's parcel (Development Area C1)
- C. The magnet school parcel (Development Area H2)
- D. The access roads to the above parcels (core project area ring road and East Hartford Boulevards)
- E. Additional Development Areas (ADA, A3, B, C2, D, E, F, G, H1, J, ND)
- F. Transportation spot improvements outside of the core project area

The intensified survey required soil probes in the first two priority areas, which are in the open former airfield; most of the core area access road system is also in the open. The unusually early onset of winter made the soil probe work difficult. AHS was able to complete the probe work in Development Areas A1, A2, and C1 in November and early January, despite having to suspend work temporarily due to inclement weather. AHS staff shifted to the intensified walkover work during freeze-out conditions unless there was significant snow cover. Completion of the intensified work was delayed over a month by unfavorable weather, but summary reports on the top two priority parcels were produced in December 2005 and January 2006, and revised after SHPO comments in January 2006 (Harper 2006a, 2006b). In this section AHS provides a summary account of the intensified survey results according to the four priority areas and the project as a whole.

The present-day landscape within Rentschler Field has been greatly modified from its original character. The most obvious change to anyone walking across the former airfield is the leveling of the ground surface. Even though the airfield was constructed on a flat Pleistocene terrace, the minor topographic variation that would have been present in the former agricultural fields was erased by the cutting of any minor knolls or other hummocks and the filling of low damp ground. Coupled with this large-scale grading was a reorientation of the local hydrology. Historic maps depicting the project area indicate that both major drainages within the project area, Willow Brook to the north and Pewterpot Brook to the south have been manipulated (Figures 17-19). Before the mid 1890s, Willow Brook had two branches within the project area. The stream divided in the vicinity of Development Area E, just west of Rentschler Stadium. The north branch ran parallel to the boundary between the stadium property and the current project area, crossing beneath Silver Lane close to the present-day stream course. The southern branch once flowed across the center of the Stadium lot and through the wetlands in the northeastern ND Development Area. By the early 1930s, the Fairchild aerial surveys show (Figures 14 and 15) the southern branch of Willow Brook had been buried and the water diverted southwards into Pewterpot Brook, and the northern branch had been shifted northwards and ditched. The diversion of the surface water from Willow Brook to Pewterpot Brook was accomplished by the creation of a series of new ponds and ditches along the eastern edge of the airfield area. Water was conveyed southward through these ditches to a new stream channel. This channel (the north branch of Pewterpot Brook) extended from the southeastern corner of Development Area C1, southwest across Development Area C2, and between Development Areas A1 and A2. The new channel joined the existing Pewterpot Brook channel near the southwestern corner of the airfield, approximately 400 feet north of Brewer Street (see Figure 19).

This first major series of changes to the local hydrology predate the initial construction of the airfield and were likely made to increase the agricultural productivity of the fields between Brewer Street and Silver Lane. Although the modifications are quite large in scale, it is important to keep several things in mind. The fields were planted with tobacco in the late 19th and early 20th centuries. This was an unusually lucrative crop for local farmers, and there was great incentive to maximize the crop yield. Secondly, the flat landscape on the terrace made the changes much easier to accomplish than they would be in most parts of the state.

A second major phase of drainage manipulation was initiated by the construction of the airfield itself. For the first ten years after the construction of the Pratt & Whitney plant in 1930, the airfield was just that: an open, grassy field where small planes could land and take off. There were no formal runways. The field served not only the aircraft-engine plant but also general aviation in the Hartford area. Starting in 1940, the company began laying out the present paved runways and also built hangars and a control tower at the northwest corner of the field; these buildings still exist but are outside the project limits.

Along with the paving of the runways, a new stormwater drainage system was created. This system included a series of ditches around the airfield and within the wooded land to the east as well as new catch basins along the edges of the runways and within the areas between the runways in the airfield. The eastern two-thirds of north branch of Pewterpot Brook, created just decades before, was buried and now flows through a conduit beneath Development Area C2. The stream emerges from the conduit near the eastern corner of Development Area A1 and the last 2,200 linear feet of the stream flows between Development Areas A1 and A2 before joining the south branch of Pewterpot Brook.

A. Intensified Phase Ia Survey at Former ING Parcel (Development Areas A1 and A2)

A.1 Project Area Description and Existing Conditions

The former ING parcel includes two discontiguous Development Areas (A1 and A2) totalling approximately 32.5 acres near the southern end of Rentschler Field (Figure 5). Development Area A1 is the larger of the two, encompassing 24.7 acres. The majority of this area is north of the north branch of Pewterpot Brook, with a narrow extension running between Runway 22 and main trunk of the brook (Figure 24). Development Area A2 occupies approximately 7.8 acres between the two branches of the brook. The parcels are separated by the northern branch of Pewterpot Brook, a perennial stream which now flows west-southwest across the project area. This bifurcated drainage has been extensively modified during the 20th century, and the northern branch now flows underneath the airfield in a buried conduit before emerging into an artificial pond located between the two parcels. All of the subsurface investigations were confined to the northern Development Area (A1); the southern Development Area (A2) was eliminated from further archaeological investigations because the results of the initial archaeological assessment indicated disturbance and soil contamination.

The terrain within the northern parcel is relatively level, with less than three feet (90 cm) of elevation change across the area. A low berm of fill is visible along the eastern edge of the artificial pond and is notable as the only easily visible topographic anomaly in the project area. Existing vegetation is dominated by perennial grasses interspersed with other low-growing herbaceous species and woody scrub. The only paved area within the parcel is a two-acre parking lot located at

the extreme southern end of the parcel. The western edge of the parcel is bounded by Runway 22, a 150-foot-wide paved runway running southwest-northeast across Rentschler Field.

A.2 Results of Soil Probe Investigations at Development Areas A1 & A2

A total of 27 soil probes were placed on the 60-meter sampling grid within Development Area A1 (Figures 24 and 26). Eighteen of the probes revealed either completely intact soil profiles topped by a deep plowzone or fill deposits overlying portions of intact solum (the A and B soil horizons) (see probe profiles in Appendix III). Five probes revealed either disturbed sediments resting unconformably on unweathered sands or fill deposits extending to a 90-centimeter depth. The remaining four probes were obstructed at shallow depths (Figure 24). Soils in undisturbed and relatively undisturbed areas showed a well-developed B-horizon underlying a thick plowzone. The dark yellow-brown to yellow-brown color and loamy character of the upper subsoils are consistent with long-term soil development under prevailingly moderately well-drained conditions. The lower subsoil and unweathered C-horizon soils were variable across the parcel, ranging from a light olive brown medium sand to light gray fine sand with traces of red-brown arkosic sands. Oxidized sands and fine sands were identified between the depths of 60 and 85 centimeters in seven of the probes, indicating the seasonal high water table was relatively high in the area before a network of drainage ditches and buried surface water drains were constructed within the airfield.

Following completion of the 60-meter grid sampling, fourteen additional probes were placed between intact and disturbed areas (Figure 24). Eleven of these supplemental probes revealed completely or partially intact solum soils. Two of the supplemental probes encountered deep fill deposits and one probe was obstructed at a shallow depth.

A.3 Interpretation

The results of the soil probe survey of Development Area A1 indicates that approximately 65% (16.10 of the 24.70 acres) of this parcel retains intact archaeologically sensitive soils within 90 centimeters of the existing surface (Figure 24). Based on the geological development of the landscape, the possibility of intact archaeologically sensitive deposits existing below this depth is remote. The original topography probably had less than a meter of relief, excluding seasonal stream channels and gullies, which are not sensitive features themselves. This is supported by the soil probe results, which suggest relatively minor variation in the original soil surface elevation across intact areas. The only exceptions to this observation are in areas of infilled wetlands near the western parcel edge adjacent to Runway 22. Peripheral wetlands surrounding the Pewterpot Brook drainage are visible on the 1936 Fairchild aerial survey and correlate well with the observed thickness of fill deposits (Figure 18). Modern disturbances to the original course of Pewterpot Brook were detected by the soil probe survey and have been designated as non-sensitive zones. All but 0.76 acres of the archaeologically sensitive area falls north of the artificial pond created within the Pewterpot Brook stream course. The small isolated area between Runway 22 to the west and the ditched Pewterpot Brook channel to the east appears to be a remnant of intact soils once bounded by two branches of these peripheral wetlands.

The spatial patterning of the obstructed probes strongly suggests that at least two sections of buried drainage conduit are present within Development Area A1. One section appears to be an outlet linking a small brick pumphouse located near the center of the parcel with the pond south of the parcel boundary. The second section of conduit appears to be oriented perpendicular to the outlet and runs east-west across the widest portion of the parcel. Given the 60-meter sampling interval for

the soil probes, it is possible additional segments of the buried drainage system are present within the parcel. However, the supplemental soil probes placed east and west of the outlet conduit suggest that the soil disturbance surrounding these conduits may be less than 10 meters in maximum width. No buried conduits were penetrated by the probes.

The archaeological sensitivity of intact areas is supported by the soils encountered, which indicate that moderately well-drained conditions prevailed during the pre-Contact and early historic time periods, and by the proximity to the original Pewterpot Brook stream course. The conditions favoring pre-Contact Native American use of the area is further enhanced by the presence of wetlands less than a kilometer north of Pewterpot Brook. Evidence of these wetlands was found during a soil probe survey of proposed development parcels north of Development Area A1, and indicates that a forested swamp likely existed within portions of Rentschler Field prior to the construction of the existing surface water drainage system and its historic antecedents. At a wider scale, the project area is less than an hour's walk from the Connecticut River, one of the most significant ecological resources exploited by Native American populations in southern New England. This constellation of ecological and topographical conditions would have attracted Native people for a variety of purposes, including habitations, short-term camps, hunting, and the collecting and harvesting of plant foods. As AHS indicated in the project EIE, in the 1930s the remains of a Podunk Indian village were recorded on "the aviation field" of the then Pratt and Whitney Aircraft Company. Even if the village core has been destroyed by development, the intact soils identified by the probe survey suggest that remains of the village may be present. Native village sites, even fragmented, are exceptionally rare, thus finding only partial remains would be significant.

B. Intensified Phase Ia Survey at Cabela's Parcel (Development Area C1)

B.1 Project Area Description and Existing Conditions

The proposed Cabela's parcel (Development Area C1) encompasses 62.10 acres of land just south of Rentschler Stadium (Figure 5). Approximately 11.3 acres (18%) of this parcel are paved, including the northeast to southwest-running Runway 22 and a single east-west-running taxiway. Runway 22 is approximately 150 feet wide and traverses approximately 2100 feet of linear distance within the parcel. Runway 18/36 is located just east of the parcel boundary.

The terrain within the parcel is quite level, with less than three feet (91 cm) of elevation change across the area excluding drainage ditches. Existing vegetation is dominated by perennial grasses interspersed with other low-growing herbaceous species and woody scrub.

B.2 Results

A total of 56 soil probes were placed on the 60-meter sampling grid within Development Area C1 (see Figures 25 and 26) and a single probe was placed just outside the boundary in the northeastern corner of the parcel. Thirty-six of the probes revealed either completely intact soil profiles topped by a deep plowzone or fill deposits overlying portions of intact solum (the A and B soil horizons). Eleven probes revealed either disturbed sediments resting unconformably on unweathered sands or fill deposits extending to a 90-centimeter depth. Eight probes revealed buried wetland soils, evidenced by light to moderate gleying and sporadic localized soil oxidation. The single probe placed just outside the boundary was obstructed at a shallow depth. Soils in undisturbed and relatively undisturbed areas in the western half of the parcel showed a well-

developed B-horizon underlying a thick plowzone. The dark yellow-brown to yellow-brown color and loamy character of the upper subsoils are consistent with long-term soil development under prevailingly moderately well-drained conditions. Subsoils in intact areas bordering the wetland soils identified within the central and eastern portions of the parcel were olive brown in color, suggesting they were at least seasonally wet for a significant period during their development. The buried wetland soils ranged from black organic mucks to grey gleyed mineral horizons. The lower subsoil and unweathered C-horizon soils were variable across the parcel, ranging from a light olive brown medium sand to light gray fine sand with traces of red-brown arkosic sands.

Following completion of the 60-meter grid sampling, eighteen additional probes were placed between intact and disturbed areas or intact and wet areas (Figures 25 and 26). Six of these supplemental probes revealed completely or partially intact solum soils. Four of the supplemental probes encountered buried wetland soil profiles. Seven of the supplemental probes encountered deep fill deposits and one probe was obstructed at a shallow depth.

B.3 Interpretation

The results of the soil probe survey of the Cabela's parcel (Development Area C1) indicate that approximately 50% (30.80 of the 62.10 acres) of this parcel contains intact archaeologically sensitive soils within 90 centimeters of the existing surface (Figure 25). Based on the geological development of the landscape, the possibility of intact archaeologically sensitive deposits existing below this depth is remote. The original topography probably had less than one meter of relief, excluding seasonal stream channels and gullies which are not sensitive features themselves. This is supported by the soil probe results, which suggest relatively minor variation in the original soil surface elevation across intact areas. However, the presence of wetland soils beneath a variable thickness of fill suggests that these minor differences in elevation may have had a strong influence on the drainage conditions within the parcel. Even relatively minor depressions within the overall level terrain may have encouraged ponding and even seasonal wetland development within Rentschler Field. While the areas surrounding such features may have been attractive to pre-Contact period Native Americans, it is highly unlikely that such damp areas would have been occupied. Even with a series of storm drains and drainage ditches within the former airfield, the water table remains elevated, as it was encountered repeatedly within 90 centimeters if the existing ground surface during the soil probe investigation.

Unlike the spatial patterning of the obstructed probes at Development Areas A1 and A2 to the south, which strongly suggested that at least two sections of buried drainage conduits are present within that parcel, obstructed probes within Development Area C1 appear isolated. This is almost certainly due to the drainage conduits falling between the sampling locations, and not due to a lack of such features within the parcel. Storm drains were visible near the center of the parcel, suggesting that a network of buried drains service this portion of the airfield as well.

The archaeological sensitivity of intact areas in Development Area C1 is supported by the soils encountered during the survey, which indicate that moderately well-drained conditions prevailed during the pre-Contact and early historic time periods in a substantial portion of the parcel. The conditions favoring pre-Contact Native American use of the area are further enhanced by the presence of wetlands within the parcel. Wetland soils indicate that a forested swamp likely existed within portions of Rentschler Field prior to the construction of the existing surface water drainage system and its historic antecedents. On a wider scale, the project area is less than an hour's walk from the Connecticut River, one of the most significant ecological resources exploited by Native

American populations in southern New England. This constellation of ecological and topographical conditions would have attracted Native people for a variety of purposes, including habitations, short-term camps, hunting, and the collecting and harvesting of plant foods. As AHS indicated in the project EIE, in the 1930s the remains of a Podunk Indian village were recorded on "the aviation field" of the then Pratt and Whitney Aircraft Company. Even if the village core has been destroyed by development, the intact soils identified by the probe survey suggest that remains of the village may be present. Native village sites, even fragmented, are exceptionally rare, thus finding only partial remains would be significant.

C. Intensified Phase Ia Survey at the Magnet School Parcel (Development Area H1)

The proposed Magnet School will be constructed within Development Area H2, located along the eastern project area boundary (Figures 1 and 5). Development Area H2 encompasses a total of 9.7 acres of gently sloping wooded land. Based on the results of the walkover survey, AHS estimates that approximately 5.7 acres (59% of the total) of H2 is archaeologically sensitive (Figure 28). This estimate is based on the level topography, relatively well-drained soils, and the parcel's proximity to ecologically attractive resources, such as the nearby wetlands which once bounded Pewterpot Brook to the south and Willow Brook to the north. The non-sensitive portion of the parcel is dominated by wet soils. Other areas were found to be disturbed through small-scale borrow-pit excavations and limited use of the area as a dumping ground for automobile parts and appliances.

D. Intensified Phase Ia Survey of Access Road Area

Internal transportation improvement within the core development area include two access roads, the ring road and smaller access roads to individual parcels which together comprise ca. 44 acres (Figures 1, 2 and 5). Nineteen soil probes on the arbitrary 60-meter grid fell within the area of the proposed interior transportation improvements (Figure 26). Of these only five indicated intact or buried soil profiles indicative of potential archaeological sensitivity. Six probes indicated buried wetland sediments, six showed disturbed profiles, and two were obstructed by presumed conduits. Proposed East Hartford Boulevard South runs primarily along Runway 4/22 to Brewer Street. No soil probes fell within this largely paved area. Proposed East Hartford Boulevard North runs from the northern end of the ring road northwest to Silver Lane where it intersects close to the junction of existing Airport Road and Silver Lane. Only one soil probe fell in this area and produced only disturbed soil sediments. No further testing is recommended in either of the proposed Boulevard areas. The ring road and adjacent access drives encompassed the remaining 18 probe locations. Five probes indicating areas of intact, potentially archaeologically sensitive sediments fell within the ring road and are indicated on Figure 28. These areas total approximately five acres. Areas where the ring road extends into the wooded eastern portion of the core development area were not found to be archaeologically sensitive based on the results of the intensified Phase Ia walkover of this area and data provided by BEC summarizing contaminated and wetland areas.

E. Additional Development Areas

Parcels ADA, A3, B, C2, D, E, F, G, H1, I, J and ND comprise the remaining Development Areas within the core project area. These parcels comprise ca. 405 of the 499 development area acres within the core development area, exclusive of the internal road improvements. Of these, only A3, B, C2, D, E, and F fell within the open former airfield area and were subjected to soil probe testing (the remaining parcels are discussed separately below). One hundred twenty-five soil probes were placed within these parcels (Figure 26). Fifty-one probes indicated intact or buried intact profiles, 21 showed evidence of buried wetland sediments, 44 probes indicated fill or disturbed sediments and nine probes were obstructed by presumed utilities conduits. summarized in Figure 28. Plowzones in these probes ranged from dark brown to black fine sandy loams to very fine sandy loams. The thickness of these deposits ranged from 18 centimeters to over 50 centimeters. The thicker plowzones are almost certainly augmented with topsoil fill, however no distinctive stratigraphic break was evident between the in-situ and displaced soils. Upper subsoils were all sandy loams, ranging in color from strong brown to yellow brown reflecting a continuum moist very fine- to drier fine-grained textures. The B2/1 horizon, the first subsoil typically preserved beneath the plowzone ranged in thickness between 15 and 40 centimeters. Lower subsoils are typically pale yellow brown to light olive brown in color and range from fine to very fine sands with some traces of silt. Unweathered Pleistocene-age sands beneath the subsoils ranged from massive olive grey fine sands to finely interbedded silts and sands. The interbedded strata were either deposited during the down-cutting of the former Glacial Lake Hitchcock lakebed, or by ephemeral streams shortly after the Connecticut River settled in its existing channel. Fourteen of the soil probes containing a fully intact natural profile were capped by fill deposits. The thickness of fill deposits in these areas ranged between 20 centimeters to 75 centimeters. This demonstrates that even well-drained low-lying areas were filled and graded during the construction or modification of the airfield.

Each Development Area was assessed for its archaeologically sensitive acreage, as shown in the table below. Archaeologically sensitive areas comprised 11 acres within Development Area A3, 5.5 acres of Development Area B, 14.4 acres of Development Area C2, 8 acres of Development Area D, 3.6 acres of Development Area E and none of Development Area F. Together the sensitive areas of these parcels total 42.5 acres. Sensitive areas are rather scattered in Development Areas A3, B and C2, but form a relatively dense zone within Development Area D (which is contiguous to intact portions of the Cabela's parcel C1). Development Area D and the northern part of Development Area C1 are of particular interest because they lie within the area designated by Spiess as the location of the Podunk Village (Figure 20). Development Area E contains somewhat scattered intact soil areas, in part because of the filling and rerouting of the southern branch of Willow Brook in this area. This area is significant because it contains the location of the Revolutionary War-era wigwam site mentioned by Goodwin in 1879 (Figure 21). Historic map overlays with the current project plans indicate that this area falls near the center of Development Area E, within an area of intact soils near probe N1620E1020. There is a good possibility that this site has not been disturbed and can be relocated.

A more intensive walkover survey of the wooded portion of the project area was undertaken in February of 2006 as part of the supplemental Phase Ia survey of the project area. This area includes Development Areas ND, H1, G, I and the eastern portion of C2 (Magnet School parcel H2 was discussed separately above). While the results of this second inspection are in general

accordance with the preliminary EIE results, the additional observation allowed for a more detailed delineation of archaeologically sensitive areas and areas of excessively wet, disturbed, or contaminated conditions. A detailed review of several large-scale topographic anomalies indicated that they were of recent human origin. These may have been excavated as broad shallow borrow-pits to supply fill for low lying areas once present beneath the Pratt & Whitney facilities located immediately east of the airfield, or the pits may have been part of the stormwater drainage system. The supplementary walkover clearly established that they retain no archaeological sensitivity. Other significant changes from the initial sensitivity assessment were the direct result of the removal of contaminated areas from the archaeologically sensitive category and the subtraction of the former wetlands now drained by ditches. In total, these changes resulted in the 56% reduction in the delineated archaeologically sensitive areas. The revised estimate of archaeologically sensitive area for this section of the project area is 54.8 acres as shown on the table below and on Figure 28.

Along the western project area boundary, an additional Development Area (which AHS designated Additional Development Area, ADA) is bounded to the south by Willow Street and to the east by Airport Drive. It encompasses a total area of approximately 36 acres, of which roughly 30 acres are paved. Willow Brook runs through a buried concrete conduit from the northern edge of Development Area E, beneath the central section of ADA, before emerging into a heavily modified open channel roughly 550 feet west of the junction between Willow Street and Airport Drive. From here, the brook flows west-southwestward within the ADA Development Area before crossing beneath Main Street and out of the project area. Although intact soils within close proximity to Willow Brook would be highly sensitive for pre-Contact through early historic period Native American cultural resources, the walkover survey and aerial photographs indicate no substantial areas of undisturbed ground remain within the proposed development area. A series of large employee parking lots occupy majority of this lot. Additional parking lots surround a large steel-framed building near the center of the lot, which now houses the Pratt & Whitney Surplus Store. The only large section of open ground within Development ADA, a 4.5-acre lawn-area at the northeastern end of the lot, appears to be completely re-graded land. This observation is supported by the presence of bare-mineral sands at the ground surface within the lawn area which suggests the area has been filled, as well as by comparison of the parcel's topography with the surrounding landscape. The adjacent properties located to the east of the lawn area are characterized by a gently rolling topography, with roughly two to five feet of relief in lots less than an acre in total size. The relief on the abutting properties is likely a result of the migration of the Willow Brook stream channel, which probably traversed this general area during the late Pleistocene. As the stream channel shifted, the original terrace surface was remodeled into a series of small point bars and abandoned channels which have slowly eroded into the existing topography. In contrast to this ancient fluvial land surface, the open unpaved areas of the ADA Development Area are ruler-flat. It is our opinion that significant cultural resources are unlikely to be preserved beneath this heavily modified surface and the area lacks archaeological sensitivity (Figure 28).

Development Area J is divided into two areas of tended lawn separated by a windbreak of evergreens. It is essentially flat, with the exception of low planted mounds along Airport Road. The southern portion of the parcel abuts the ADA lot and appears to be equally disturbed. Besides these relatively small areas, Development Area J appears to represent a largely intact landform. To the east of Development Area J lies a non-designated area within which road improvements associated with East Hartford Boulevard North are proposed (Figure 1). Significant portions of this nondesignated area appear undisturbed. The proximity of these areas to the old course of Willow

Brook and the Hockanum River, their flat topography and well-drained soils all indicate that they are archaeologically sensitive (Figure 28). The walkover suggests that roughly 85% of the visually undisturbed areas of parcel J and 80% of the undisturbed portions of the non-designated area to its east will require Phase Ib testing.

Archaeologically Sensitive Acreage of the Core Project Area: Development Areas and Interior Road System

Development Area	Total Acreage	Contaminated Acreage exclusive of wetlands	Wetland Acreage	Estimated Disturbed Acreage exclusive of contaminated and wetland areas	Archaeologically Sensitive Acreage
A1	24.70	0.12	0.00	9.78	14.80
A2	7.76	3.16	1.49	3.11	0.00
A3	64.16	11.51	1.65	40.00	11.00
В	30.09	0.00	0.00	24.59	5.50
C1	62.11	0.00	0.00	31.41	30.70
C2	62.73	5.21	0.39	42.73	14.40
D	11.20	0.00	0.00	3.20	8.00
E	15.20	0.00	0.21	11.39	3.60
F	6.82	0.00	0.00	6.82	0.00
G	1.20	0.65	0.00	0.55	0.00
H1	20.20	0.43	0.00	7.47	12.30
H2 (Magnet School)	9.70	***************************************	0.00	4.00	5.70
	59.17	18.75	9.94	13.38	17.10
J	7.16	0.00	0.00	0.96	6.20
ND	80.99	5.60	23.86	26.13	25.40
ADA	35.92	0.00	3.15	32.77	0.00
Interior Roads	43.40	4.67	0.80	32.89	5.04
Totals	542.51	50.10	41.49	291.18	159.74

F. Transportation Improvements outside of the Core Project Area

Inspection of the proposed intersection improvements at Willow Street and Main Street and between the proposed East Hartford Boulevard South and Brewer Street indicate that the areas to be affected have been heavily disturbed by prior development or earth moving activity. It is our opinion that no additional archaeological investigation in these particular areas are warranted. The walkover survey of the proposed new right turn lane on the south side of the existing Silver Lane west of Airport Road found this area to be the most archaeologically sensitive. Although minor grading along the road's margins is apparent, the essentially flat landscape suggests the soil disturbance is most likely confined to the immediate area bordering the road edge. Because detailed plans for the road improvements were not available at the time of the survey, AHS assumed a

maximum area of impact for the new turn lane extending west of the existing Airport Road and Silver Lane intersection will extend no further than 75 feet from the existing road edge. A total linear distance of approximately 800 feet extending west form the edge of Airport Road appears to be archaeologically sensitive. Proposed changes to the north side of Silver Lane in the vicinity of this same intersection do not appear to threaten any areas of intact soils. We estimate that approximately 1600 meters of roadside improvements will require archaeological testing. This is a preliminary estimate based on current proposed road design changes. A more precise estimate of archaeological sensitivity cannot be calculated until road improvement associated with the Rentschler Field Project have been finalized. Additional areas of historic sensitivity associated with standing structures are discussed in the following section.

VII. HISTORIC AND ARCHITECTURAL RESOURCES

Historic resources are buildings, structures, objects, districts, and sites that are eligible for the State or National Registers of Historic Places, the criteria for which are essentially the same:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.

The national and state registers recognize properties that are significant on the local, state, or national level.

No properties in or near the project area are currently listed on the National Register of Historic Places. The Abraham Clark House, 104 Silver Lane, and the first Frank Roberts House, 430 Silver Lane, are listed on the State Register of Historic Places.

The only building or structure of substantial size and scale within the project area itself is a ca. 1960 control tower. Built with a steel skeleton and clad with corrugated steel panels, the 50-foot tower was a replacement for an earlier and smaller control tower located at the corner of one of the hangar buildings at the northwest corner of the field (not part of the proposed undertaking). Because of its late date (less than 50 years old), it is not considered eligible for the State or National Registers of Historic Places.

Because transportation-related construction is anticipated as part of the undertaking, including intersection improvements, road widening, and ramps from nearby limited-access highways, the survey area for standing historic resources also included Main Street from Brewer Street to Silver Lane, the north side of Brewer Street, and both sides of Silver Lane between Main Street and Forbes Street. In the opinion of the consultants, the following properties in or near the project area meet the criteria for listing on the state and national registers (photographs of the properties appear in Appendix II and on a location map as Figure 6):

Hockanum Cemetery, west side of High Street opposite Brewer Street. Surrounded by a low brownstone wall, the cemetery includes numerous 18th and 19th century brownstone and granite markers that are typical of their period and therefore possess local landscape-architecture significance under Criterion C. Although cemeteries are

not normally eligible for inclusion in the National Register of Historic Places, cemeteries that derive their primary significance from distinctive design features, as does the Hockanum Cemetery, may be listed. The Hockanum Cemetery contains several stones by the noted carver Peter Buckland and two elaborate stones by the carver known only as the "Upswept-Wing Carver" (Slater 1996: 166).

Silver Lane School, 15 Mercer Avenue. Built in 1928, the two-story brick school embodies the Late Gothic Revival or Collegiate Gothic style of architecture. It has been much less altered from its original appearance than the South Grammar School, also in the project vicinity. Historically, the school reflects the town's early 20th-century efforts to keep up with an expanding population. Now used for offices, it has a ca.1960 gymnasium/auditorium addition to the north. Because of its role in the educational history of the town and its exterior ornament, the school can be considered to have local historical and architectural significance.

Pratt and Whitney Plant, 400 Main Street, 1930, Albert Kahn, architect (including portions originally built for Hamilton Standard and the Chance-Vought Corporation). The Pratt and Whitney Plant, including two other Untied Aircraft components built at the same time and later taken over by the Pratt and Whitney division, has long been recognized as one of Connecticut's most significant historic industrial sites. Kahn was an internationally renowned architect who pioneered the use of mammoth one-story steel-framed industrial buildings for automobile and aeronautical factories in the early 20th century. His distinctive "butterfly" roof monitors are prominently in evidence in the original parts of the Pratt and Whitney plant. Historically, the plant has two areas of significance: 1) the manufacture of the Wasp engine, arguably the most successful piston aircraft engine of all time, an engine that provided more than half of all the United States' airplane horsepower in World War II; and 2) the development of successful, quantity-produced jet engines in the post-War period. Beginning with the J-42, based on English jet engines developed by Frank Whittle, Pratt and Whitney in the 1950s went on to develop the J-57, the first jet engine to develop 10,000hp. A total of 21,170 J-57s were produced between 1951 and 1965 and powered a myriad of military and commercial aircraft.

In addition to manufacturing buildings, the complex includes laboratories and administration buildings, both original and from the World War II period; engine test cells; and Rentschler Field, which served both the company and, from 1930 to 1940, civil aviation for all of the Hartford area. The field was originally just grass. The first paved runways were created in 1941 and in a later 1944 expansion. It should be noted that the construction of the University of Connecticut football stadium and associated parking has truncated two runways at the north end of the field and more modern manufacturing facilities now overlay part of the airfield's northwest quadrant.

In terms of its historic significance, Rentschler Field must be considered as an ancillary component of the overall historic resource represented by the Pratt and Whitney plant. While not as central to the plant's character as the huge manufacturing buildings that were designed by Albert Kahn and that played such a central role in aviation history, the field was part of the company's World War II operations and later jet-engine development and manufacturing, and so it contributes

to the overall resource.

- Coca Cola Bottling Plant (south portion), 451 Main Street, 1942. The rounded corner, stylized entrance surround, and fluted parapet of the original brick part of the bottling plant embody the Moderne or Art-Deco style of architecture. Although an international brand, Coke historically was bottled in numerous local plants; this style of building was a signature of the company and was repeated in variations throughout the country in the 1930s and 1940s. It therefore has a claim to local architectural significance.
- Fire House No. 5, 304 Main Street, 1932, a two-story brick building containing two bays for fire apparatus. Although utilitarian in appearance, it has local historical importance as the first "modern" brick fire house in East Hartford, then served by four wooden fire houses dating back to 1893.
- Luther Pratt House, 17-19 Silver Lane, 1878. This 2 ½-story Mansard-roofed house embodies the distinctive characteristics of the Second Empire style. It retains numerous original features, including bracketed cornices, porch with turned posts, two-over-two sash, and Eastlake-type window trim. It has local significance as an example of this type of architecture. Luther Pratt was a tobacco farmer.
- Benjamin Hills House, 32 Silver Lane, 1731. This 1 ½-story gambrel-roofed house has been altered somewhat but retains its appropriate clapboard siding and divided-light sash. Hills was one of the original settlers in the area who sold land to the town for Silver Lane. As one of the oldest houses in town, it has local historical significance and also architectural significance as an example of a colonial-period New England dwelling.
- Horace H. Hills House, 61 Silver Lane, 1831. This 2 ½-story house is a pristine example of the Greek Revival style as executed in rural areas of Connecticut in the decades prior to the Civil War. It retains such characteristics as a pilaster-and-lintel entry, six-over-six sash with molded window surrounds, and full cornice return. It has local significance as an example of this type of architecture. Horace Hill was a farmer.
- **Silas Chapman House**, 84 Silver Lane, 1870. Although not one of the more elaborate examples of the Queen Anne style, this house appears to be completely original, including its original corner tower, Victorian porch, and cornice brackets. It has local significance as an example of this type of architecture. Chapman was a tobacco farmer.
- Abraham Clark House, 104 Silver Lane, 1786. One of the most authentic 18th-century houses remaining in East Hartford, this two-story house with a lean-to roof features a clapboarded exterior, stone foundation, large center chimney, divided-light sash, and splayed molded entrance surround. The Abraham Clark House is listed on the State Register of Historic Places.
- William Smith House, 166 Silver Lane, 1730. The 10' posts employed in the framing of this 1 ½-story house make it doubtful that it is as old as it is traditionally dated. However, the clapboarded exterior, divided-light sash, and large central chimney all convey an early appearance and make it one of the best Colonial-type houses remaining on Silver Lane. Smith was a tavern-keeper; the neighboring Colonial-type

- House, 158 Silver Lane, is said to have at one time been the William Smith tavern. William G. Forbes House, 382 Silver Lane, 1896. This 2 ½-story clapboard and woodshingled house embodies the distinctive characteristics of the Queen Anne style. It includes Eastlake-type ornament on the rake boards and in the gable peaks, Victorian porches, a porte-cochere, and a large carriage house to the rear. It has local significance as an example of this type of architecture. Forbes's family owned paper mills along the Hockanum River.
- **Samuel Forbes House**, 398 Silver Lane, 1878. This 2 ½-story Mansard-roofed house embodies the distinctive characteristics of the Second Empire style. Among the early if not original features are its polychrome slate roof, Victorian porch, and Eastlake-type window trim. The property includes a small barn. It has local significance as an example of this type of architecture. Forbes was a tobacco farmer.
- Frank Roberts Houses; 430 and 438 Silver Lane. The earlier of the two related Roberts houses (430 Silver Lane) is a 2 ½-story clapboarded house, ca.1870, that combines a Greek Revival flush-sided gable and cornice return with an Italianate round-arched gable. It is listed on the State Register of Historic Places. The later house next east (438 Silver Lane) is a 2 ½-story Queen Anne-style house built in 1901. Its clapboard and shingle siding, multiple gables, and Victorian porches make it a fine example of the style. Both houses have local significance as examples of their respective types of architecture. Both are associated with Frank T. Roberts, a successful tobacco farmer and for 21 years the first selectman of East Hartford.
- Gould House, 480 Silver Lane, 1912. This wood-shingled Colonial Revival-style gambrel-roofed house retains many features characteristic of the style and, except for the partial porch enclosure, is virtually unaltered from its original appearance. Important details include the Tuscan porch columns, Palladian and circular keystoned windows in the gables, and leaded upper portions of some windows. It has local significance as an example of this type of architecture. The Gould family was involved in the creation and operation of the Silver Lane Pickle Company, which operated a pickle factory on the south side of the street from 1902 until the 1960s.
- Potential Historic District, north side of Silver Lane between 382 and 502-504 Silver Lane. In addition to recommending the foregoing houses as individually eligible for listing on the state and national registers, a continuous district of historic houses on the north side of Silver Lane is recommended for consideration. Such a district would include the afore-mentioned individually distinguished houses, as well as two similar well-preserved ca.1920 Colonial Revival-style houses adjacent to the Gould House, 460 and 470 Silver Lane, and also the altered but still recognizably Colonial 1740 Russell Smith House at 502-504 Silver Lane. The only modern interruption of such a district would be the ca.1970 garrison-type house at 454 Silver Lane. Such a district would be eligible on the basis of the architectural qualities of the houses and the association of many of the original owners with important episodes in East Hartford's history, such as tobacco farming, papermaking, and pickle-packing.

It should be noted that there are hundreds of houses and other buildings in close proximity to the proposed project activities that are more than 50 years old. Many if not most of these have been altered with additions, window replacement, and modern siding materials so that they no longer

have the requisite integrity for listing on the National Register - for example, the numerous ca.1925 Bungalows, Foursquares, and other houses from the area's first period of residential development on the grid of streets north of Willow Street. Even taken collectively, it is difficult to envision a district of these generally plain and highly altered buildings that would meet the criteria for listing on the state and national registers. Examples of other buildings of historical interest that were considered but not recommended as individually eligible, mostly because of issues of integrity, include:

- South Grammar School, Brewer, High, and Main streets, a large 1914 brick school building that has been altered with modern windows and a cell-tower facility on the roof.
- Eighteenth-century house, 353 Main Street, ca. 1780, substantially altered from its original appearance with modern windows, dormers, siding, and a Greek Revival-period entrance.
- Jonathan Wells, Jr. House, 381 Main Street, ca.1780, moved back from the street and substantially altered with the addition of a 20th-century storefront.
- Commercial block, 417-419 Main Street, ca. 1930. Although probably not changed much from its original appearance, the relatively late date and lack of architectural distinctiveness of this two-story yellow-brick building make its National Register eligibility highly doubtful.
- Commercial block, 499-501 Main Street, 1936. Although probably not changed much from its original appearance, the relatively late date and lack of architectural distinctiveness of this two-story red-brick building make its National Register eligibility highly unlikely.
- Craftsman-style house, 531 Main Street, formerly one of the best examples of the style in East Hartford but now sided, obscuring its distinctive stucco and shingled exterior.
- Algernon Pratt House, 39-41 Silver Lane, ca. 1850. Although it retains some original features, this 2 ½-story Greek Revival-style house is not as well-preserved as its neighbor at 61 Silver Lane, having been altered with modern windows.
- Italianate-style house, 74-76 Silver Lane. Of historic interest as the home of tobacco farmer John Foley in the 1890s, the two-story hip-roofed house has been altered with modern windows, siding, and probable loss of cornice brackets.
- John Abby House, 93-95 Silver Lane, ca.1808. A two-story Colonial-type house greatly altered with modern siding, modern doors and windows, Victorian porch and other additions, and a gable pinnacle on the east end.
- William Smith Tavern, 158 Silver Lane, 1730. Although of an early date, the house has been altered with modern false-muntin windows, siding, replaced entrance, end chimney, and a Greek Revival era cornice return.
- House, ca.1800, 305-307 Silver Lane, believed to have been moved to the site in the late 19th century. It has modern siding and what appears to be a modern Colonial-style entrance.
- Russell Smith House, 502-504 Silver Lane, 1740. This 2 ½-story Colonial-type house has been altered with a stucco exterior, modern windows, a Colonial Revival portico, small replacement chimneys, and double entries. Note that it may be eligible for the National Register as part of a continuous district of historic houses along this part of Silver Lane (see above).

VIII. CONCLUSIONS AND RECOMMENDATIONS

A total of 259 soil probes were placed within the proposed development areas encompassed by the former airfield (Figure 26). The results of the subsurface investigation suggest that there are substantial areas of intact archaeologically sensitive soils within the area of potential project impacts. About fifty percent of the probes (128 out 259) revealed intact or partially intact well drained to moderately well-drained soil profiles. Thirty-nine of the soil probes (15% of the total) encountered *in-situ* wetland soils, as evidenced by the presence of gleyed or partially-gleyed soils, organic mucks, or localized horizons of highly oxidized sands. The remaining 92 probes revealed completely disturbed profiles or were obstructed. Table 1 summarizes the results by development area. The use of the soil probe survey proved to be an effective method to discriminate soil conditions indicative of archaeologically sensitive areas over a broad area. Intensified walkover survey also resulted in the refinement of areas of archaeological sensitivity in the areas not subject to soil probe study (Figure 28).

Archaeologically sensitive areas defined during the soil probe investigation are dispersed throughout the former airfield with the exceptions of the southeastern corner (within Development Area A3), the area between the branches of Pewterpot Brook (Development Area A2), and the area bounded by Runway 4/22 and the southeast-northwest-oriented taxiway (northern portion of Development Area B). These three areas have unusually small percentages of intact soils. Large contiguous areas of intact soils were identified on the east side of Runway 4/22 in Development Areas C1 and A1 and on the west side of the same runway in Development Areas C1 and D. Development Area D may contain the remnants of the Podunk Village noted by Spiess (Spiess and Bidwell 1924). Development Area E contains scattered intact soils, but is associated with the location of the Revolutionary War-era wigwam site noted by Goodwin (1879) (Figure 21). In general, the area east of Runway 18/36 was once wetland or is now disturbed, though even here several small areas of intact soil were identified. Central and western portions of Development Area A3 contain contiguous blocks of intact soils. This area is considered especially sensitive because of its proximity to Pewterpot Brook.

Intensified walkover survey indicates that ca. 350 acres of wooded, other non-airfield parcels and areas of spot road improvements outside of the core development area contain archaeologically sensitive areas. These areas are graphically presented in Figure 28. The areas vary in their degree of sensitivity. Within some areas, as in somewhat disturbed wooded parcel H2, associated with the Magnet School, only sixty-percent of the overall highlighted sensitive zone is anticipated to require testing, while other areas, such as the northeastern portion of the ND parcel are quite intact, have never been developed and are likely to require testing over 95% of the area. Historic research and walkover data indicate that much of Silver Lane between Rentschler Field Stadium and Main Street will require testing should proposed road improvements occur.

The results of the Phase Ia archaeological assessment of the proposed Rentschler Field project area indicate that approximately 160 acres (25% percent) of the 650-acre project area are archaeologically sensitive. This is a notable improvement over the initial EIE estimate of 285 acres of potentially archaeologically sensitive area. The intensified Phase Ia survey has thus resulted in a 44% reduction in the total area warranting Phase Ib testing. By the regulations set out in the *Primer*, Phase Ib survey requires that no fewer than 18 shovel test pits per acre be excavated. The intensified survey thus represents a reduction of Phase Ib test pits from 5,130 to approximately 2,880. The actual number of test pits required for each Development Area will be influenced by

site-specific variables. For example, Phase Ib examination of Development Area E, where the wigwam site is located will likely require more intensive testing because 18th-century Native sites are spatially constrained and contain a limited density of artifacts, making their identification challenging. The same applies to Development Area D and the northern part of Development Area C1 where a Podunk village is reported to have been located. Other areas, such as Magnet School Development Area H2, will require fewer test pits because of the presence of untestable disturbed and wet areas.

The background research demonstrated the extensive use of the project area by Native Americans during the 17th and 18th centuries. The ecological, geological, and archaeological background research further indicate that the area would have provided ample resources to prehistoric (i.e., pre-European contact) Native American groups living in the Connecticut River Valley. The close proximity of the project area to the Connecticut and Hockanum Rivers, each less than an hour's walk away, would have given ready access to important transportation routes and food resources. The SHPO/OSA site files indicate the Connecticut River Valley and particularly the terrace sands bordering the modern floodplain have unusually high densities of archaeological resources. This generally attractive environmental setting would have been further enhanced by the mosaic of small wetland basins and perennial streams which once cross-cut the project area. Such complex environments offered a diversity of predictable food resources to foraging people. Despite the heavy development and extensive modification of the land and surface water hydrology within the project area, substantial areas of intact archaeologically sensitive soils remain. These areas are widely distributed within the project area. The table and Figure 28 summarize the combined results of all the archaeological investigations and provided archaeologically sensitive acreage within each proposed development area. AHS recommends that these archaeologically sensitive areas be subjected to Phase Ib archaeological survey before any construction of the development begins.

In addition to these archaeological considerations, the proposed undertaking has the potential to affect a number of standing historic resources on Main Street and Silver Lane, depending upon the final design of intersection improvements, road widening, and new transportation-related construction. These include the Hockanum Cemetery, Fire House No. 5, and several houses from the 18th, 19th, and early 20th centuries. These resources all have local historical and/or architectural significance and it is recommended that they be considered eligible for listing on the State and National Registers of Historic Places. Areas of specific archaeological (subsurface) sensitivity associated with 18th and 19th-century standing structures are noted in Figure 28. Additional areas of possible archaeological sensitivity can be established only after road design improvements have been finalized.

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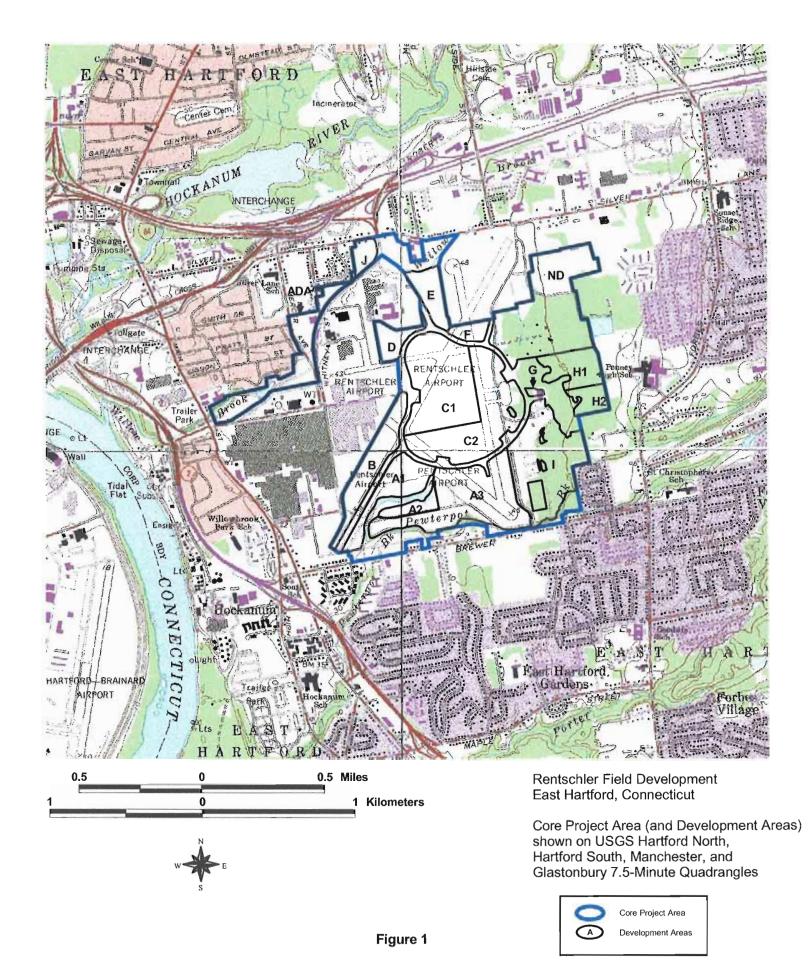
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APPENDIX I

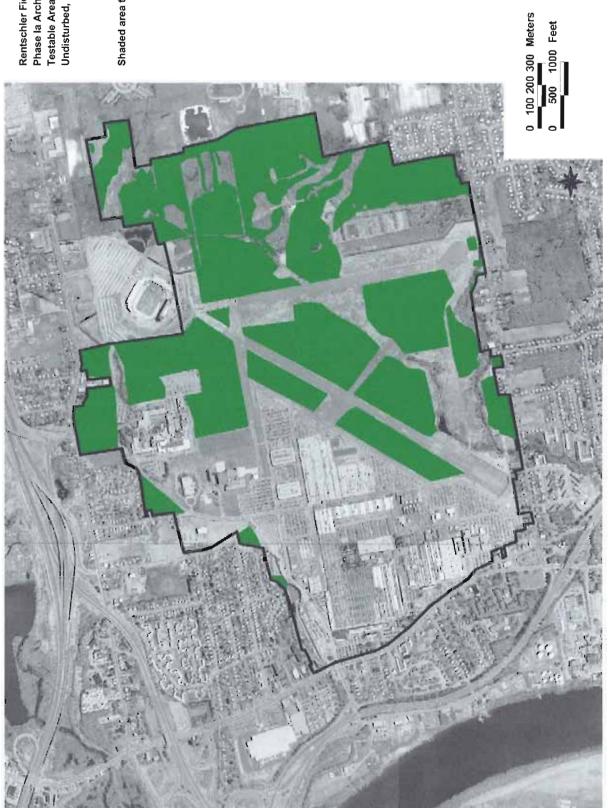
Figures



Approximate Project Bounds Legend Intact Subsoil Auger Test Results Disturbed Wetland 0 100 200 300 Meters

Rentschler Field Phase la Archaeological Survey / EIE Preliminary Soil Probe Test Results

Figure 3

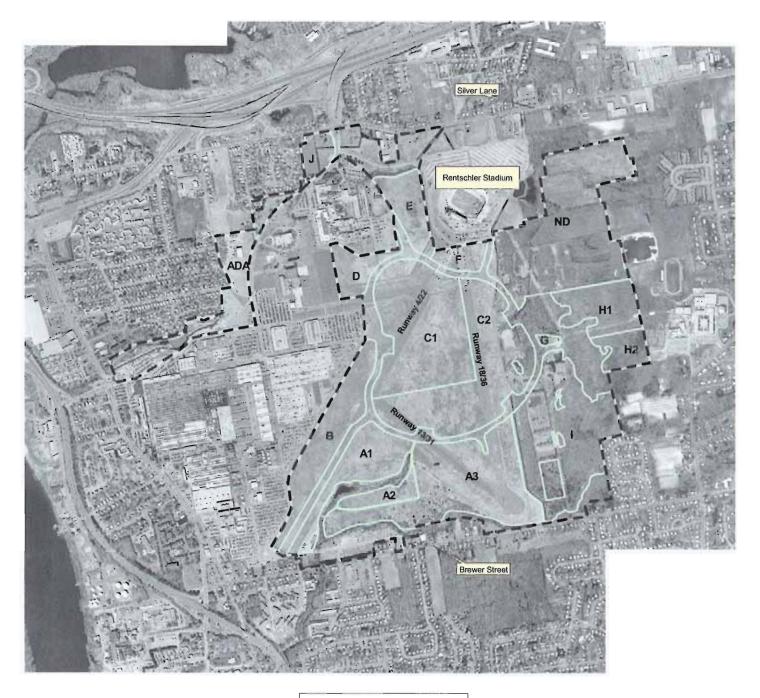


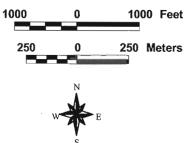
Rentschler Field - Initial Phase la Archaeological Survey Testable Areas With Soils That May Be Undisturbed, From EIE

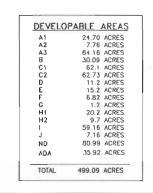
Shaded area totals approximately 285 acres

7. *** v

Figure 4





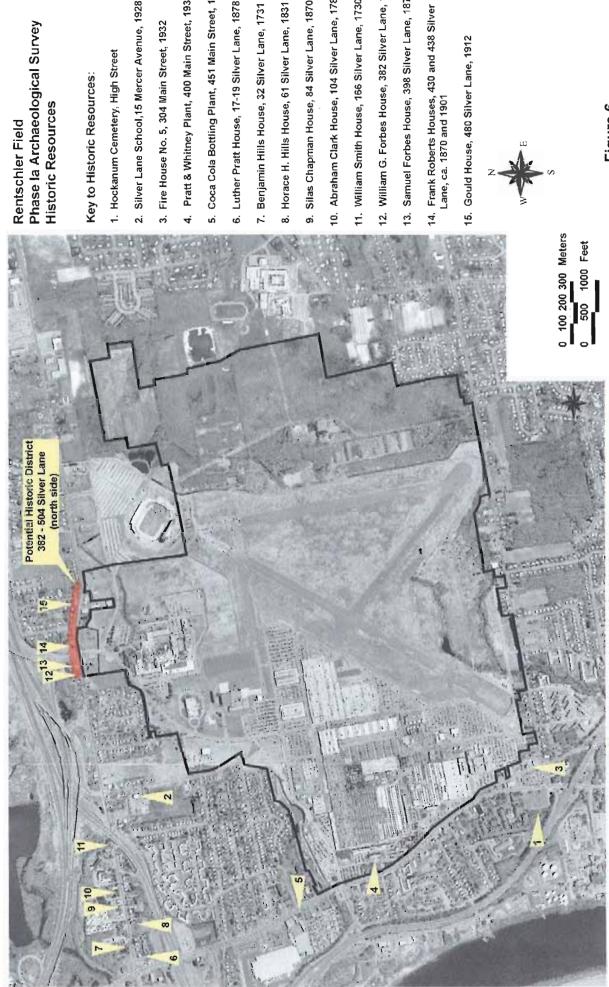


Rentschler Field Development East Hartford, Connecticut

Proposed Development Areas



Figure 5



Phase la Archaeological Survey Historic Resources Rentschler Field

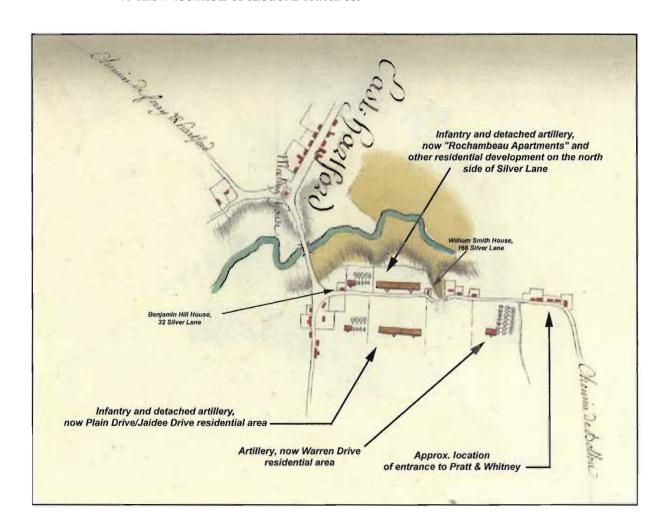
Key to Historic Resources:

- 1. Hockanum Cemetery, High Street
- 2. Silver Lane School,15 Mercer Avenue, 1928
- 3. Fire House No. 5, 304 Main Street, 1932
- 4. Pratt & Whitney Plant, 400 Main Street, 1930
- 5. Coca Cola Bottling Plant, 451 Main Street, 194
- 6. Luther Pratt House, 17-19 Silver Lane, 1878
- 7. Benjamin Hills House, 32 Silver Lane, 1731
- 9. Silas Chapman House, 84 Silver Lane, 1870
- 10. Abraham Clark House, 104 Silver Lane, 1786
- 11. William Smith House, 166 Silver Lane, 1730
- 12. William G. Forbes House, 382 Silver Lane, 18 13. Samuel Forbes House, 398 Silver Lane, 1878
- 14. Frank Roberts Houses, 430 and 438 Silver Lane, ca. 1870 and 1901
- 15. Gould House, 480 Silver Lane, 1912



Figure 6

Figure 7: Map of French army camps on Silver Lane (Rice and Brown 1972), annotated to show location of modern features.



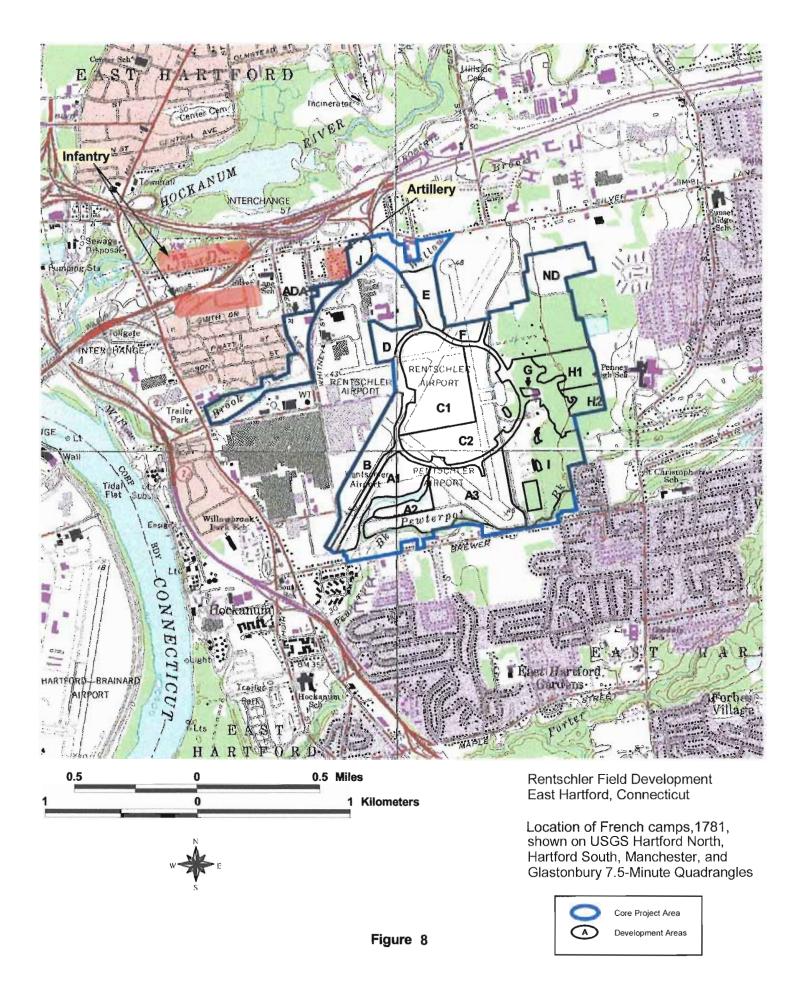


Figure 9: Blodget map of 1790, showing a sawmill (red arrow) on Willow Brook, south of Silver Lane and east of Main Street, and another on Pewterpot Brook (white arrow).

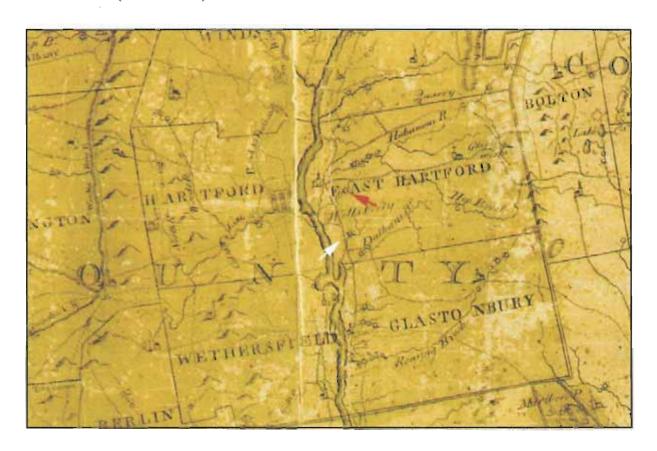


Figure 10: Warren and Gillet map of 1811, showing an oil mill (arrow) on Pewterpot Brook, probably within the project area.

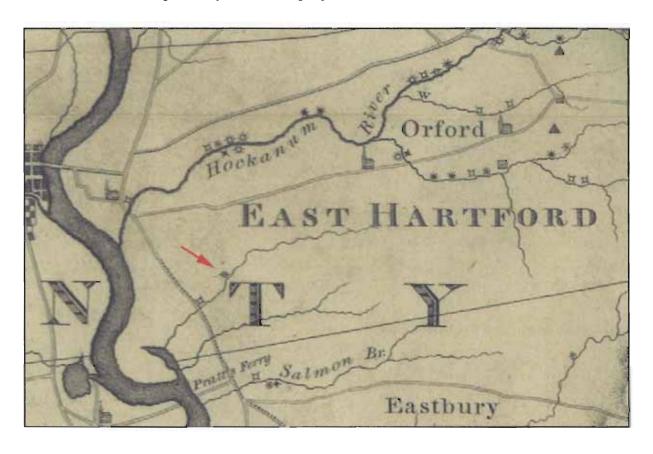


Figure 11: Project area plotted on Woodford (1855) atlas map.

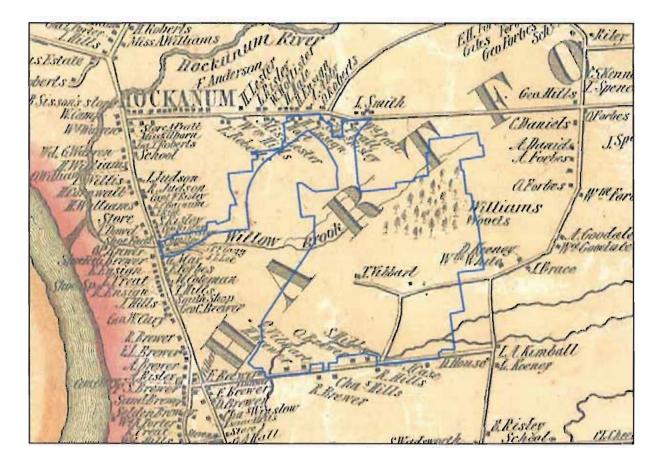


Figure 12: Project area plotted on 1869 Baker & Tilden atlas map. Inset maps in the atlas give property owners' names for the buildings shown.

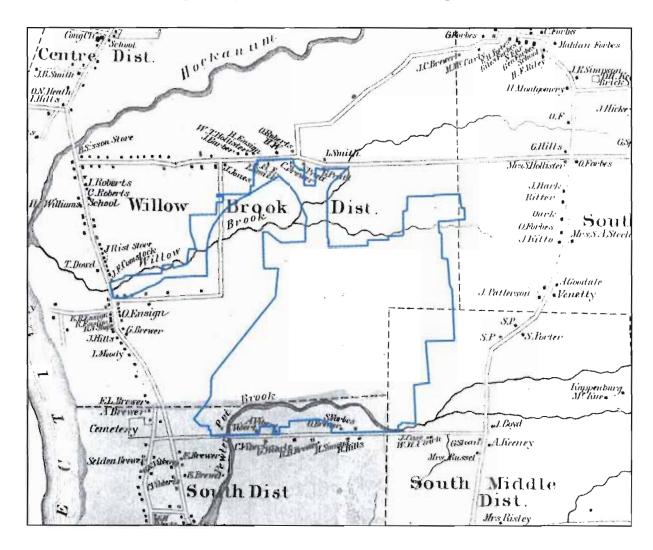


Figure 13: Project area plotted on Hyde (1884) driving chart.

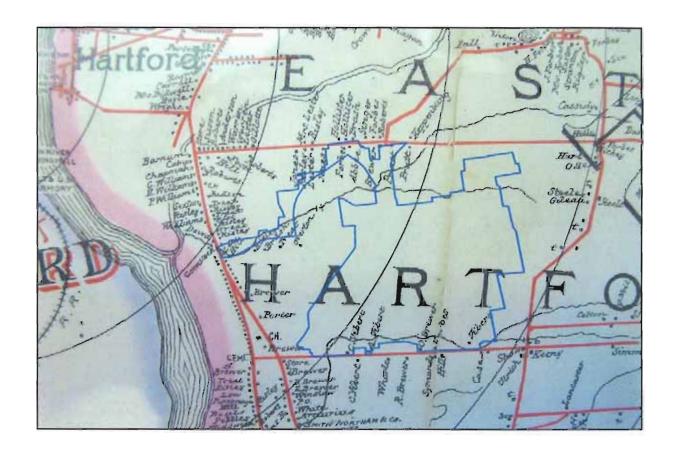


Figure 14: Silver Lane pickle factory, pond, and ice house as shown on 1908 Sanborn insurance map. Later maps indicate a cooper shop was added to the complex. Much of the pickle-factory site is now overlain by the Rentschler Field Stadium and parking, but the home of founder Frank Gould remains.

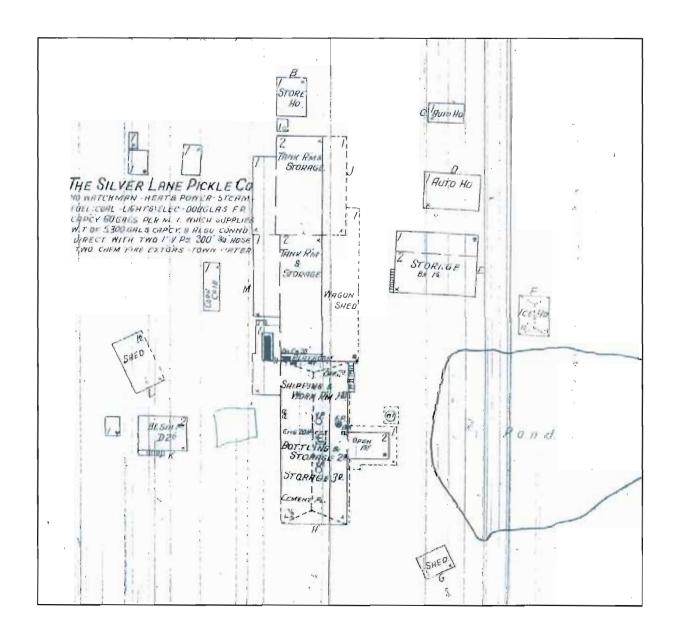
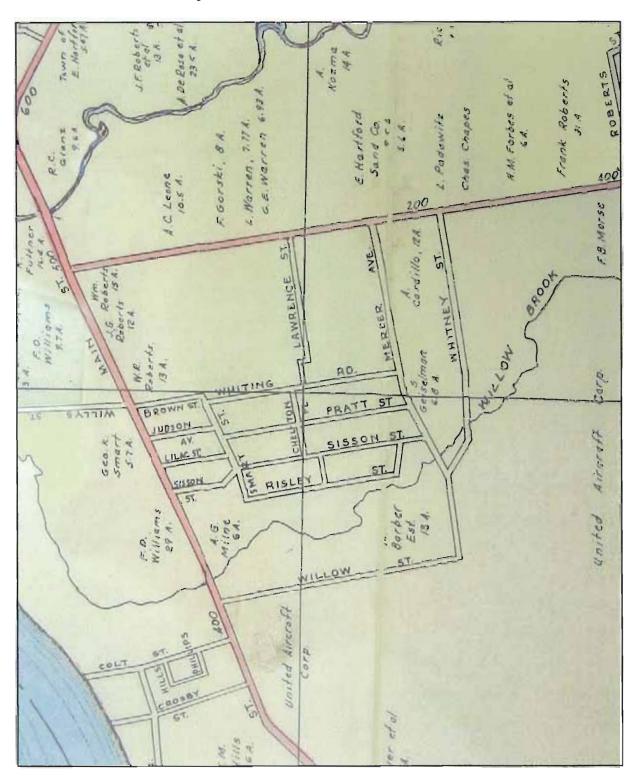
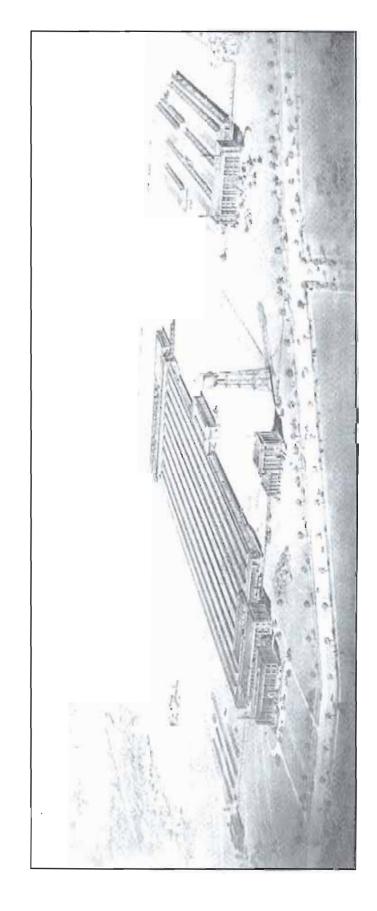
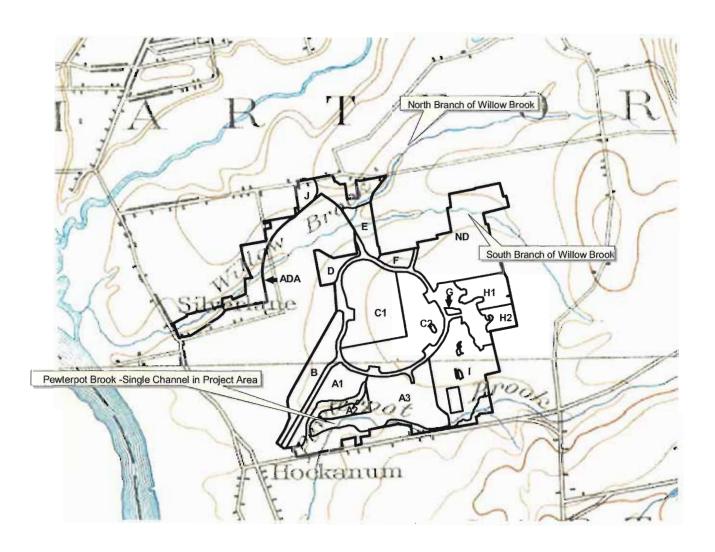


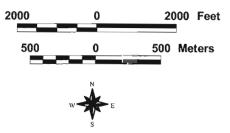
Figure 15: Early 20th-century grid of streets north of Willow Brook, as shown on Dolph & Stewart map of 1931.



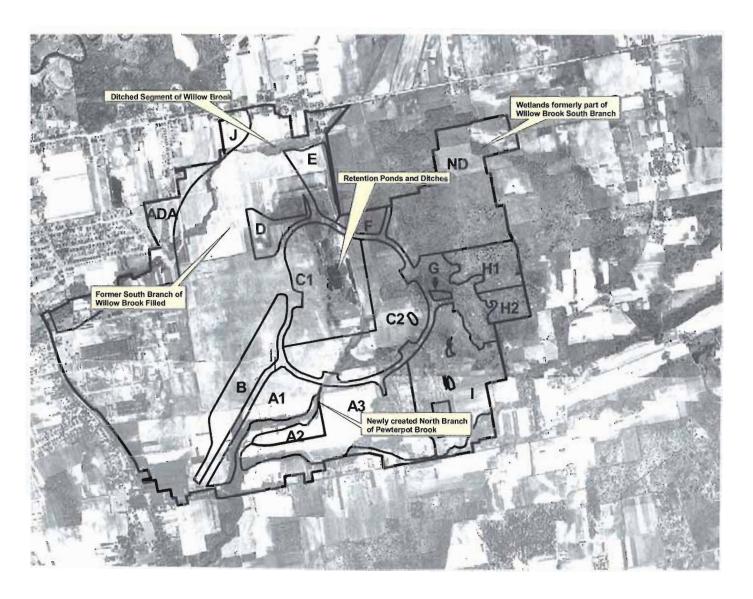


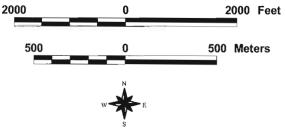
Albert Kahn, Inc. rendering of Pratt and Whitney and Chance-Vought Corporation plants (Roth 1981: 61). Figure 16:



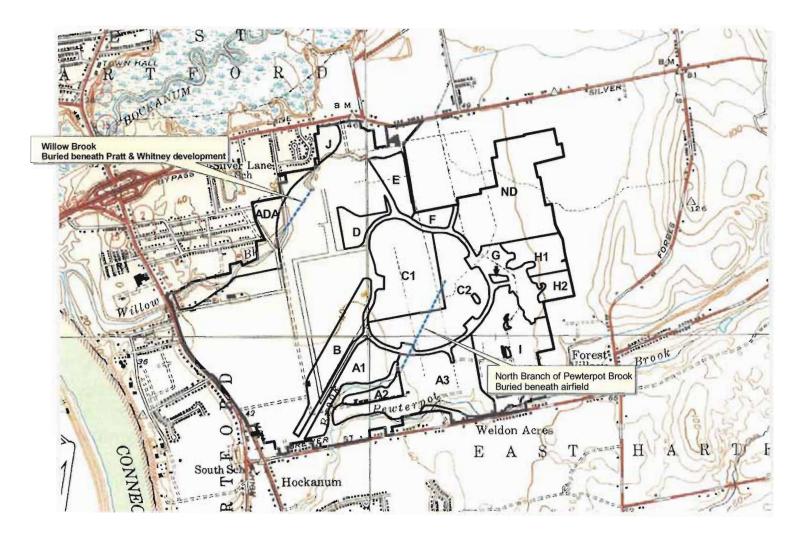


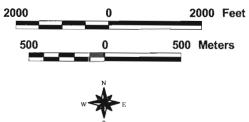
Detail of USGS Hartford and Middletown 15-minute quadrangles (1892-1893) showing major drainages within the project area





Detail of 1934 Fairchild Aerial Survey showing major drainages within the project area





Detail of USGS Hartford North, Hartford South,
Manchester, and Glastonbury
7.5-minute quadrangles (1944-1946)
showing major drainages within the project area

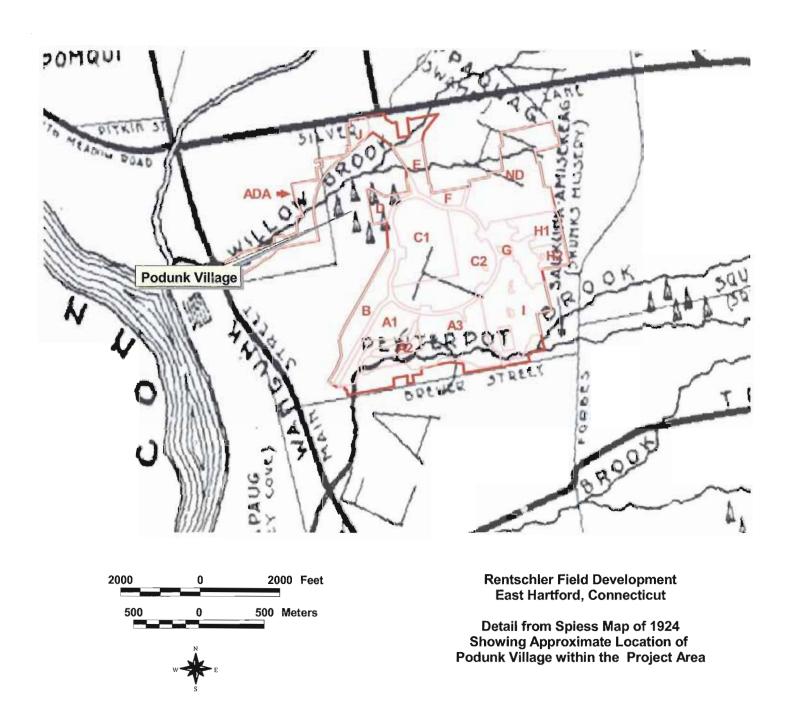
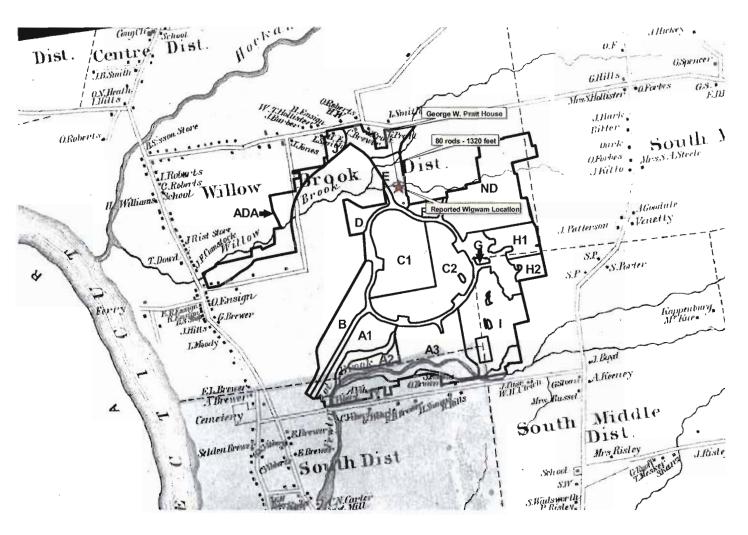
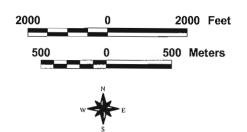


Figure 20





Location of ca. 1775-1780 wigwam from Goodwin's East Hartford: Its History and Traditions 1879 [1976 reprint]:37

Position estimated from G. Pratt House shown on Hartford County atlas: Baker and Tilden 1869

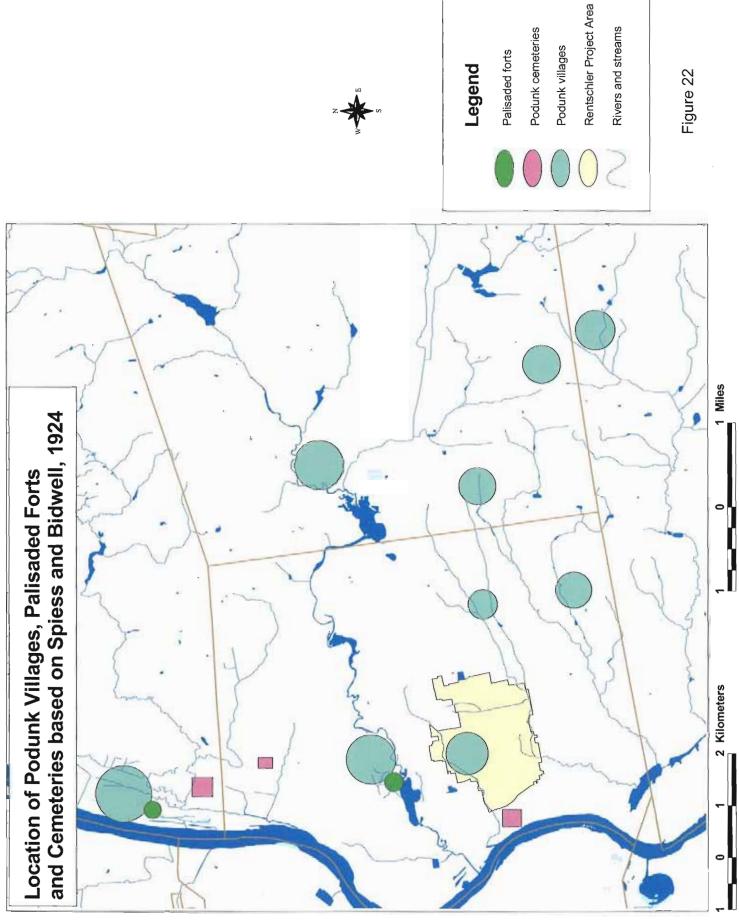


Figure 22

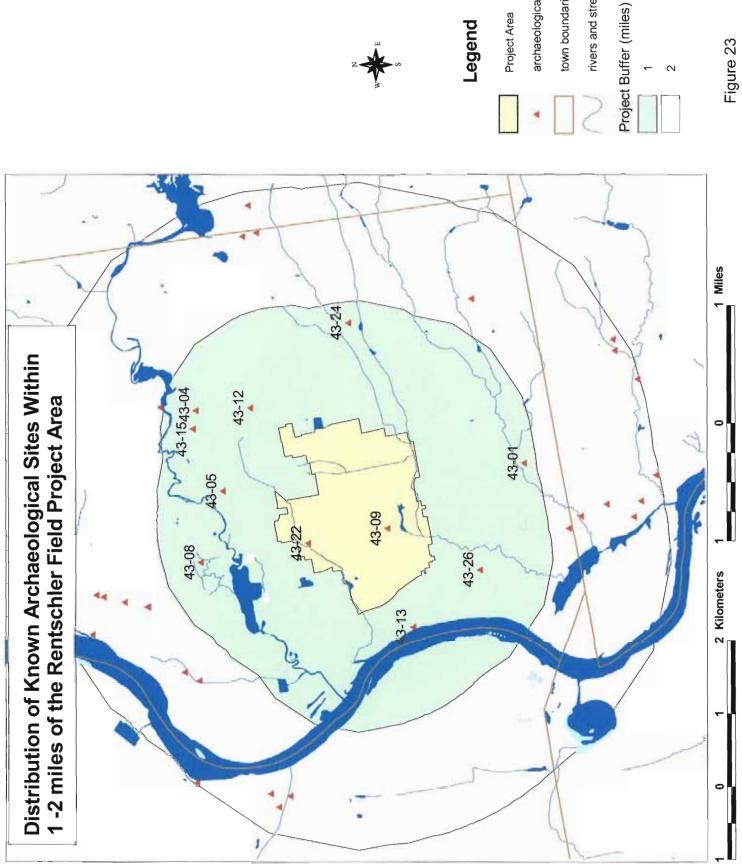


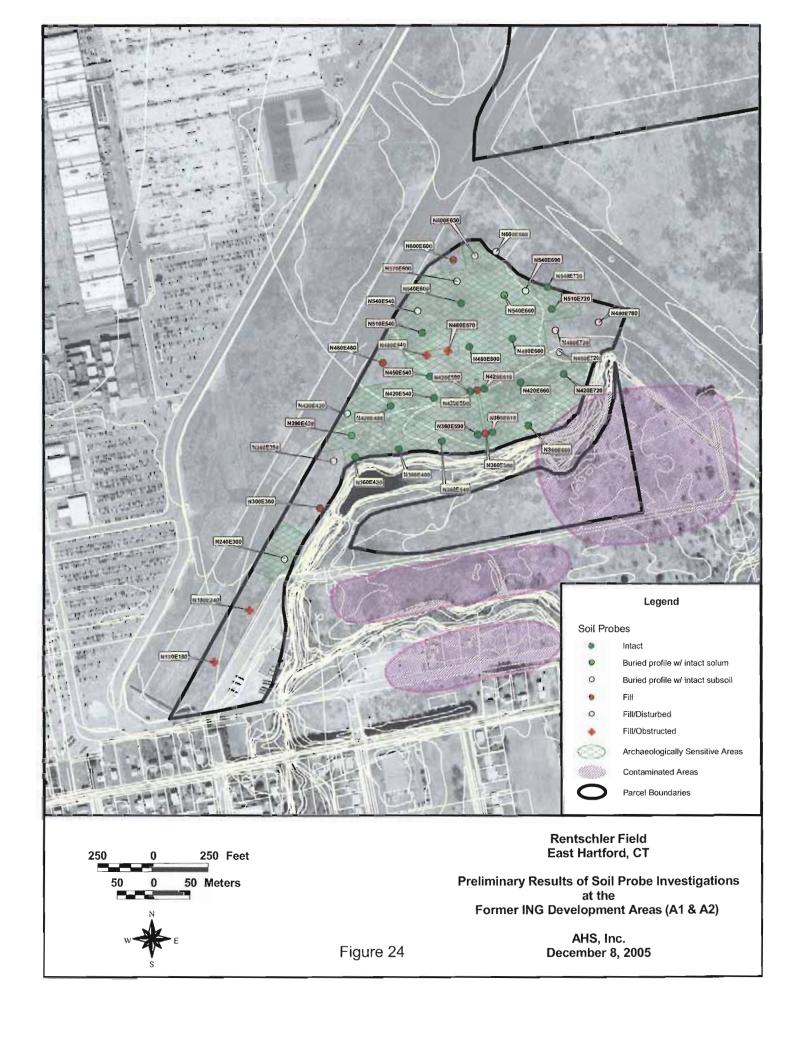
Figure 23

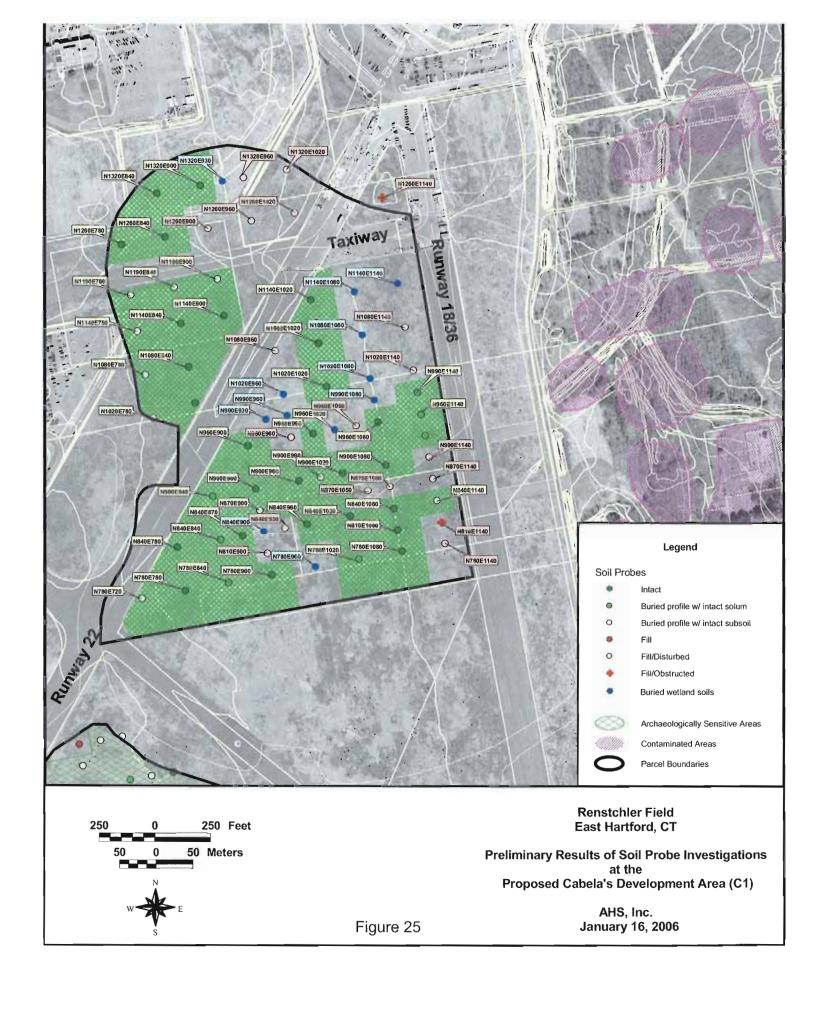
archaeological sites

Project Area

rivers and streams

town boundaries





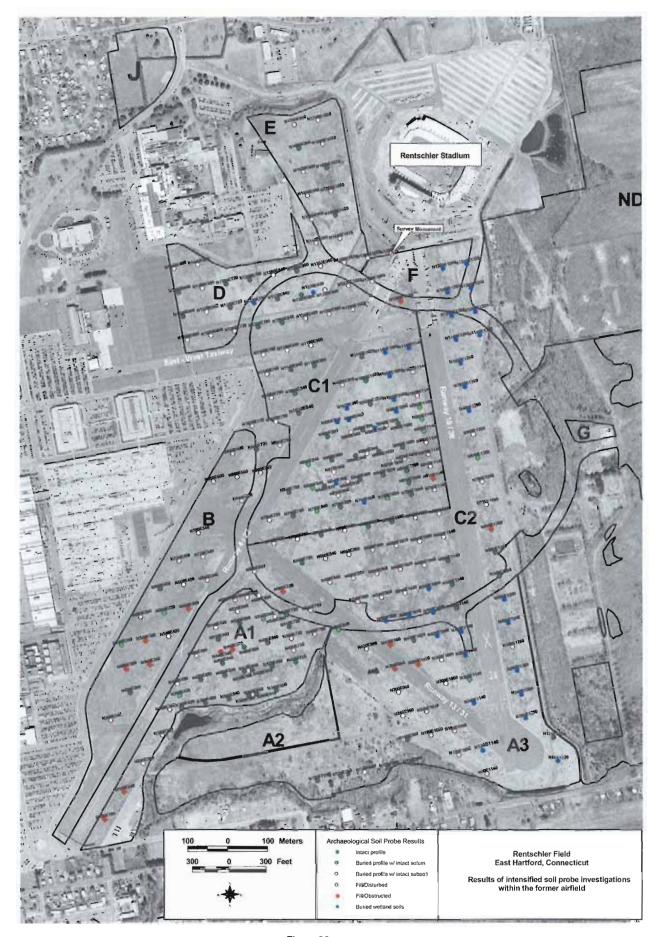


Figure 26

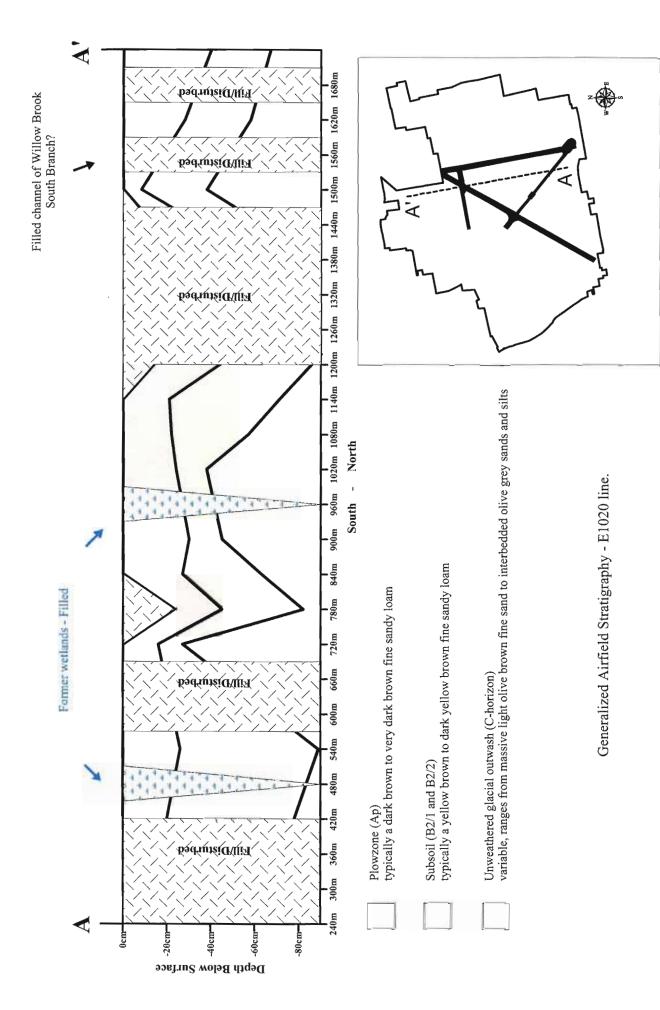
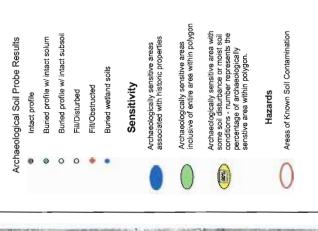


Figure 27

8 80% 70%

Rentschler Field East Harfford, Connecticut

Results of Phase IA Archaeological Assessment Survey



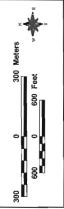
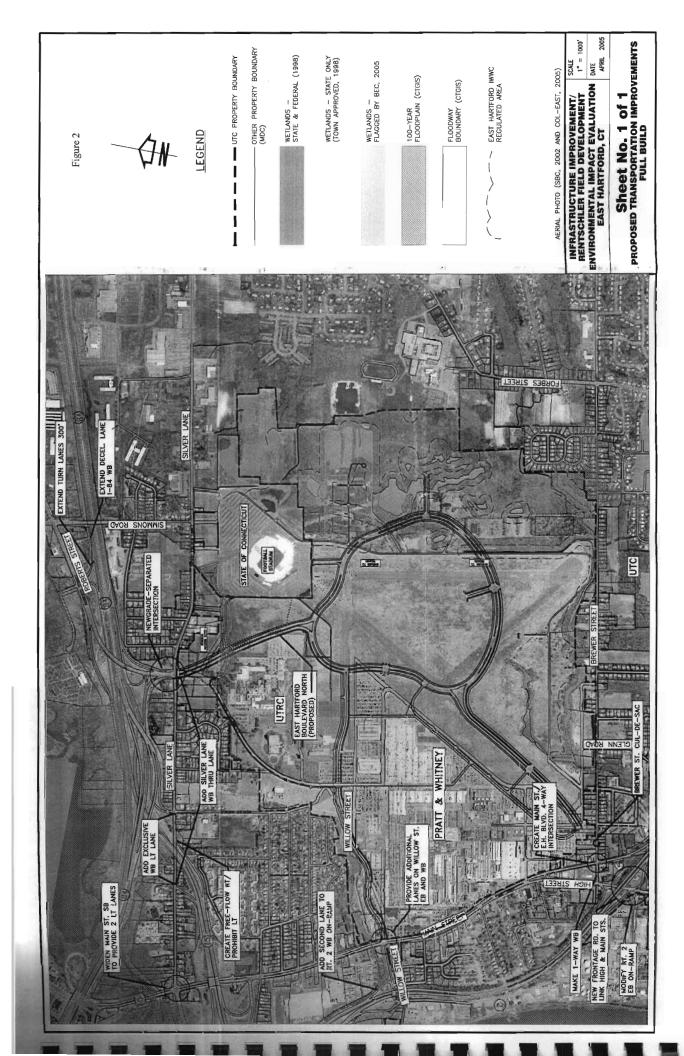


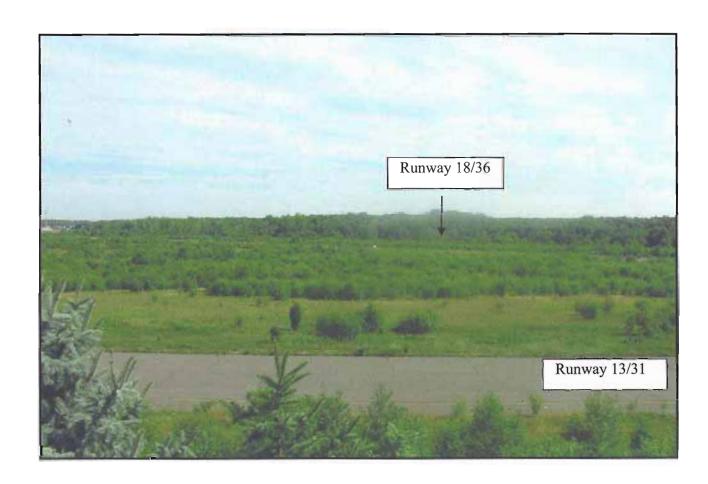
Figure 28



APPENDIX II

Photographs

Photograph 1: View of the former airfield, taken from the air control tower located at the southern end of the Core Development Area, camera facing northeast. Note the mixture of herbaceous and scrub growth between the former runways.



Photograph 2: Hockanum Cemetery, west side of Broad Street, opposite Brewer Street, camera facing northwest.



Photograph 3: Silver Lane School, 1928, 15 Mercer Avenue, east elevation, camera facing west; modern addition partly visible on right.



Photograph 4: Fire House No. 5, 1932, 304 Main Street, west and south elevation, camera facing northeast.



Photograph 5: Pratt and Whitney Plant, 1930, 400 Main Street (photograph from company web site; ground-level photography not allowed).



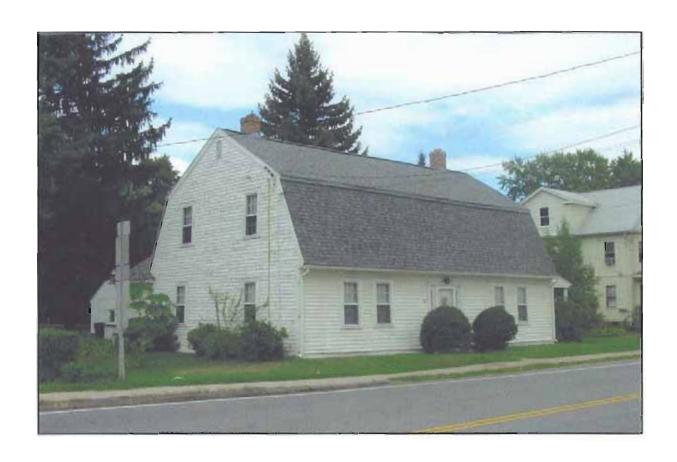
Photograph 6: Coca-Cola Bottling Plant (south portion), 1942, 451 Main Street, east elevation, camera facing west.



Photograph 7: Luther Pratt House, 17-19 Silver Lane, north elevation, camera facing south.



Photograph 8: Benjamin Hills House, 1731, 32 Silver Lane, west and south elevations, camera facing northeast.



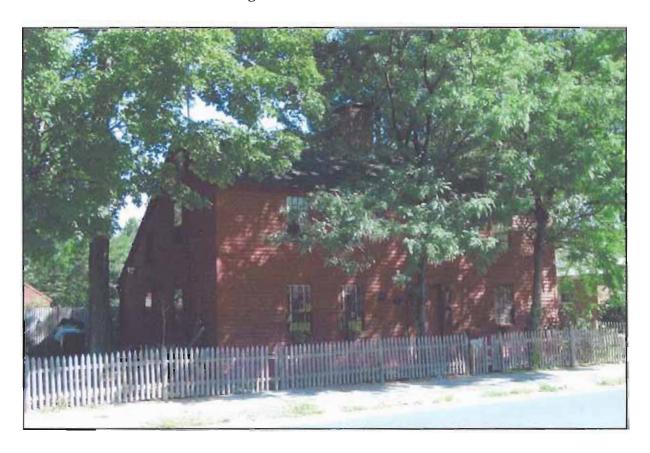
Photograph 9: Horace H. Hills House, 1831, 61 Silver Lane, north elevation, camera south.



Photograph 10: Silas Chapman House, 1870, 84 Silver Lane, west and south elevations, camera facing northeast.



Photograph 11: Abraham Clark House, 1786, 104 Silver Lane, south elevation, camera facing north.



Photograph 12: William Smith House, 1730, 166 Silver Lane, south elevation, camera facing northeast.



Photograph 13: William G. Forbes House, 1896, 382 Silver Lane, south elevation, camera facing north.



Photograph 14: Samuel Forbes House, 1878, 398 Silver Lane, south elevation, camera facing northwest.



Photograph 15: First Frank Roberts House, ca. 1870, 430 Silver Lane, south elevation, camera facing northwest.



Photograph 16: Second Frank Roberts House, 1901, 438 Silver Lane, south elevation, camera facing northwest.



Photograph 17: Gould House, 1912, 48 Silver Lane, south elevation, camera facing northwest.



Photograph 18:

House near the Gould House, ca. 1920, 460 Silver Lane, south elevation, camera facing north. While probably not individually eligible for the National Register, the house would contribute to a potential National register-eligible historic district between 382 and 504 Silver Lane (north side only).

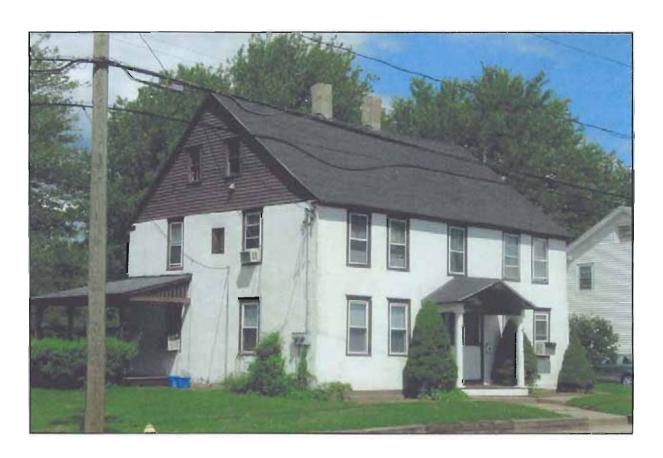


Photograph 19: House near the Gould House, ca. 1920, 470 Silver Lane, south elevation, camera facing north. While probably not individually eligible for the National Register, the house would contribute to a potential National register-eligible historic district between 382 and 504 Silver Lane (north side only).



Photograph 20:

Russell Smith House, 1740, 502-504 Silver Lane, near the Gould House, ca. 1920, 460 Silver Lane, west and south elevations, camera facing northeast. While probably not individually eligible for the National Register, the house would contribute to a potential National register-eligible historic district between 382 and 504 Silver Lane (north side only).



APPENDIX III

Probe Profiles

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